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History of The British Railways During The War 1939-1945

By R. BELL, C.B.E.

with a foreword by Sir WILLIAM V. WOOD, *President, London Midland & Scottish Railway*

This book describes the great war accomplishment of the railways for the nation and for world freedom. Mr. Robert Bell, C.B.E., was Assistant General Manager of the London & North Eastern Railway Company. After his retirement in May, 1943, he was invited by the railway companies to write this history, and all who are interested in the work of the railways in these memorable years will be indebted to him for this volume.

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N.U.R. and Nationalisation Results

THE probability of a substantial deficit on railway operations for the first year of nationalisation is raised in the current issue of *The Railway Review*, the organ of the National Union of Railwaymen. It points out that the sole source of receipts for British Railways will come from freight and passenger charges; hotels and buses, docks and harbours, will come under a different heading. Against this will have to be set the railway share of British Transport Commission stock, an unusually heavy bill for capital charges, re-equipment of permanent way and plant, and reasonable conditions for the staff. The article points out that capital charges and wages and salaries are considerably heavier than ever before. Millions of pounds will be required for capital equipment. The wages bill has risen by about £37 million recently and 90,000 more workers are employed than a few years ago. These charges cannot be met by increased rates and fares, it is argued, because at the present time the law of decreasing returns is operating strongly and any further rise in rates will only mean a loss of traffics and of receipts. The conclusion is reached, therefore, that it is doubtful if the railways can become fully self-supporting for some years. In attaining this ultimate objective railway operations will be conditioned far more intimately than ever before by their unity with other forms of transport.

* * * *

Decline in Passenger Travel

Elsewhere in this issue a review of No. 10 of the British Transport Commission's *Transport Statistics* emphasises the steep decline in rail passenger travel during August and September. The situation is disquieting, as much additional train-mileage was run at high costs for wages and fuel. Despite improved services, both first and third class travel fell off, and there is little prospect of a recovery of the lost business without a thorough revision of fares and train services. There is an impression in some quarters that American railways are developing passenger travel by enterprising moves and skilful propaganda. Actually, their passenger revenue in August was 1·6 per cent. below August, 1947, and represented no more than 10·6 per cent. of their total operating revenue. Results on individual railways vary, but during the first eight months of this year, only 38 out of 125 Class 1 railways increased their passenger takings by moderate amounts. The largest passenger carrier among American railways is the Pennsylvania, which took one per cent. less in fares to the end of August, whereas the passenger revenue of the New York Central was higher by 1·7 per cent. The takings of the Chesapeake & Ohio, which has advertised its passenger facilities extensively, were down by 6 per cent. In the western district, the Santa Fe added 4 per cent. to its revenue, but passenger business on the Southern Pacific and Union Pacific declined. Whether any of these railways made a profit on their passenger services is a moot point.

* * * *

An American Analogy

Month by month the tonnage of high-class merchandise originating on British Railways is below the 1947 level. Post-war conditions increased last year's forwardings to almost 20 per cent. above 1938, and it may be that the total volume of some traffics offering for conveyance has diminished permanently. On the other hand, road hauliers are competing keenly for business, and more tonnage is passing in traders' road vehicles under "C" licences. It is, therefore, a question as to whether the railways will be able to hold high-class goods to rail at existing rates and charges. A similar problem is vexing the American railways. In 1947 they had record peace-time freight carryings. During the 43 weeks to October 30, 1948, total wagon loadings of all commodities were 3·4 per cent. below 1947. Recently, forwardings of less-than-wagon-load traffic have been especially poor, falling off, for example, by 10 per cent. in the week ended October 23. About 20 years ago, one wagon in every four contained "smalls," whereas last year the ratio fell to one in seven, and is sure to be lower when totals for 1948 are announced. High rail rates and slow transits may explain the loss of much of this valuable traffic to road and air transport.

Losses on State Air Lines

The accounts of the three State air lines for the financial year ended March 31 show combined losses of £11,086,909 compared with £10,214,274 in the previous twelve months. During this period all three lines lost money, as the small profit of £20,507 made by B.S.A.A. in 1946-47 was turned into a deficit of £421,481. B.E.A. reports a loss of £3,573,989 against £2,157,937. A statement by the Ministry of Civil Aviation refers to the very considerable reorganisation by the B.O.A.C. and B.E.A. to effect economies and bring into service more economic aircraft. For the current year the losses of these two corporations are expected to exceed the maximum grant of £8 million from the public funds. Steps now being taken, however, are expected to yield substantial results in the year 1949-50, with progressive improvement in subsequent years. The loss a ton-mile by B.E.A. was half that of the previous twelve months, while expenditure a revenue ton-mile showed a decrease of 40 per cent. and continues to fall. Volume of traffic carried increased. The report comments that people travelling within the United Kingdom have not responded to air travel facilities to the same degree as those using Continental services. Given reasonably favourable conditions the board is confident that B.E.A. will provide increasingly efficient air travel at home and in Europe at a steadily decreasing cost.

* * * *

Overseas Railway Traffics

Gross earnings of the Canadian Pacific Railway during October were £8,613,250, or £1,159,000 higher than those for the equivalent period of 1947 and, accompanied by a £1,044,000 increase to £7,195,500 in working expenses, gave a net return of £1,417,750. These net earnings were £115,000 above last year's figure, and the aggregate decline during the first 44 weeks of the C.P.R. financial year now has been brought back to £1,082,000, with net earnings since January 1 totalling £2,871,500. In the fortnight ended November 27, G.W. of Brazil traffics made successive advances of £1,700 and £1,500, and aggregate receipts for the 47 weeks to date have recovered to £22,500 below those for 1947, since November 6, when they were down by £26,300. During the two weeks under review, receipts were £42,100 and £45,700, and on the aggregate were £1,569,900, at November 27. At £217,730, Gold Coast traffics during October were more than double those for the same month in 1947, and showed an increase of £118,047. For the 31 weeks to date, Gold Coast traffics are up by £374,708, at £1,401,622.

* * * *

Efficiency of the Steel Industry

For many years, and especially since the recent war, the iron and steel industry has shown that private enterprise and the profit motive can, with the willing backing of the rank and file, produce results of great benefit to the country as a whole. Even at the Trades Union Congress held in the autumn Sir George Chester came out in favour of the profit motive, until, as he put it, there was found some other form of incentive to take its place. Despite the continual breaking of all steel output records, however, this efficient and contented industry now is threatened with State control in a complicated form. Little wonder, then, that when iron and steel men get together this subject is ventilated in no uncertain manner. Last week the British Steel Founders' Association gave a dinner, which is reported elsewhere in this issue, when Sir Frederick Bain, President of the Federation of British Industries, was one of the principal speakers. He described the present Government plans for the State control of iron and steel as a menace which would bring disorder all round. Mr. F. A. Martin, Chairman of the Association, said that the industry made no apology for wanting to make profits, without which there was no security for anyone.

* * * *

The Prospects of the Channel Tunnel

In the course of an interesting statement made to a joint committee of both Houses of Parliament on December 1 by Sir Herbert Walker, Chairman of the Channel Tunnel Co. Ltd., a number of interesting points were made. When the matter was last examined in detail in 1929, Sir Herbert Walker, as General Manager of the Southern Railway, had to point out that such a scheme would have a serious effect on the finances of the railway company, although that company was entirely in favour of the tunnel. He was now able to show that, during the past 20 years, circumstances have arisen which have considerably alleviated the situation, and should assist materially in the future consideration of the scheme, which at current prices should cost between £50 and £60 million. The tunnel cannot be ready for operation before 1960. Gross revenue based on 1928 volume, and current fares and rates, is estimated at £5,985,000. Sir Herbert estimated operating costs at £600,000 per annum for train working (assuming an average of 50 trains a day) and £400,000 for maintenance, ventilating, etc. The annual net revenue of £4,985,000 would meet interest on £66,000,000 of new capital at 3 per cent., leaving £2,895,000 to cover the loss of £500,000 on the steamers, the guarantee to the Dover Harbour Board, and any incidental expenditure that might arise.

* * * *

Loudspeakers and Amplifiers at Stations

To some age-groups of present-day travellers it must seem almost a legend that British railway stations formerly rang with the cry of "chocolates, cigarettes!" Such an announcement would strike them as equally sensational as the idea of a disembodied voice proclaiming train times and destinations once would have appeared to their grandparents. The station loudspeaker today has established itself as a means of railway communication, and an article in this issue describes the equipment involved in a typical station announcing system. One feature of special interest is the provision made for giving the announcer telephone communication with the operating staff. Sometimes, it has seemed that at times of traffic dislocation the unseen mentor has been as dubious about the destination of the next train from No. 1 platform as the intending passengers themselves, and just when most needed the loudspeakers have lapsed into baffled silence. Opinions as to the intelligibility of announcers probably will continue to vary as long as British diction retains local characteristics, but at least it can be said that modern sound reproduction equipment gives to them all the best chance of being understood. Uniformity of accent hardly could be achieved otherwise than by recording all standard announcements in their proper sequence, and reproducing them as needed by pressing a button, but that measure would mean losing those very effective spontaneous rebukes to latecomers trying to board a moving train.

* * * *

Disillusionment

At a meeting in London of the Institute of Traffic Administration, reported elsewhere in this issue, several speakers representing the operative grades expressed their dissatisfaction with the present set-up of nationalised transport. It was contended that management is over-centralised and lacking in flexibility, and that the rank-and-file workers are too far removed from the administrative departments. Although the taking over of the railways by the State on January 1, 1948, marked the end of a political controversy which had raged with varying intensity from the beginning of the first world war, it did not follow that there would be no further debate on the progress of the experiment. It is only to be expected that there will be complaints and grumbling about the organisation and administration of the industry, and also a sense of disillusionment on the part of the average wage-earner, for neither does it follow that State ownership makes everybody much happier than they were before or that the position of the employee is bound to be better after the private shareholders have been bought out.

* * * *

History of a War Transport Service

Presenting a history and pictorial survey of their battalion's activities during the war, Lt.-Colonels Fred W. Okie and John M. Budd, successive Commanding Officers of the 727th Railway Operating Battalion, Transportation Corps, Military Railway Service of the United States Army, express the belief that when the official chronicles are written, reference to the 727th will reflect the only glory that matters—duty well done. Apart from any personal knowledge he may have

of that battalion's work on the Continent and in North Africa, the reader of this record should be left in no doubt that such glory is most richly deserved. The 727th, which was organised as a reserve unit in 1929, was activated at Camp Shelly, Mississippi, in March, 1942, and embarked at New York in December of the same year; some three years later, after service in a variety of theatres of war, the battalion was de-activated at Mannheim, Germany. Valuable assistance was accorded the 727th by the Southern Railway System of America, which, at a difficult time, gave instructors and supplied the necessary railway equipment and facilities for training, and appreciation is expressed in the book to those officers and employees who gave their time and experience to assist in the establishment of a well-knit organisation.

* * * *

The First B.T.C. Bill

THE text of the Parliamentary Bill of the British Transport Commission for the 1948-49 Session is of particular interest as this is the first Bill to be promoted by it since nationalisation. It is promoted under the normal Private Bill procedure by the Commission as a statutory corporate body in very much the same way as the Bills promoted in the past by the railway companies and the London Passenger Transport Board, and is in no sense a Government measure. The power to promote Bills was granted under Section 9 of the Transport Act, 1947, subject to the consent of the Minister of Transport, in substitution for any powers which the Commission might otherwise have possessed as successor to the railway and other undertakings it acquired. This power is specifically reserved to itself by the Commission, and has not been delegated to any of the Executives. The British Transport Commission has benefited considerably from having taken over the efficient Parliamentary staffs of the main-line railways and the London Passenger Transport Board. The present Bill is a tribute to their customary clarity of drafting.

This Bill, while it does not differ greatly in form from those promoted by the former railway companies, is wider in scope, since it comprises matters affecting the rail and road services of London Transport, the main-line railways, and the docks and inland waterways belonging to the Commission.

First of all, it is worthy of note that the Bill does not propose to alter or extend in any way the general powers conferred by the Transport Act, 1947, but only to grant such powers for the acquisition of land for specific works, for extensions of time in respect of works already authorised, and for such similar matters as in former years would normally have been included in Bills of the railway companies. Plans, sections, and books of reference, relating to the intended works, and to the lands which it is sought to acquire have been deposited for public inspection with the clerks of the respective local authorities in the customary way.

Six new works are envisaged, none of which involves the construction of new railways, but two are concerned with railway widenings of some importance. Power is being sought to effect a widening, which will doubtless amount to quadrupling, nearly a mile (1,600 yd.) in length of the District and Piccadilly Lines in the Borough of Ealing, extending from Acton Town (North Junction) to North Ealing (Hanger Lane Junction) where the lines to Ealing Broadway and Uxbridge diverge. This will be undertaken with a view to increasing the peak-hour service on the Piccadilly Line north of Acton Town. The other widening (1,136 yd. long) is of a section of the railway between Radford and Basford, in Nottingham, London Midland Region, so as to provide for an additional down running line north of Radford Station.

Powers are sought also for the purpose of effecting improvements to the Metropolitan and Piccadilly Lines at Rayners Lane Station to enable increased services to be provided on those lines to Uxbridge; for the construction of stabling and shop accommodation at Ickenham for additional trains on the Piccadilly Line, and a permanent way depot, also at Ickenham; and for the provision of additional depot accommodation at Stanmore for extra rolling stock on the Bakerloo Line.

In connection with road transport, the Commission is applying for powers to construct a road vehicle depot at Ickenham adjoining the proposed railway depots; to be relieved of certain statutory and other restrictions so as to enable its New Cross tramway depot to be converted to a bus garage; and to improve or construct garages at Camberwell and Kingston.

With regard to inland waterways, the Commission is applying to be relieved of its obligations in regard to navigation on disused portions of two former railway-owned canals in Wales (the Swansea and the Monmouthshire Canals), and on a portion of the River Aire near Leeds, forming part of the Aire & Calder Navigation.

An interesting clause is one for the removal of doubt as to the charging powers at Holyhead Harbour. These were granted for the duration of the lease to the L.M.S.R. from the Minister of Transport, which lease was inherited by the B.T.C. As the rights of the Minister, as successor to the Board of Trade in respect of Holyhead Harbour, were also vested in the Commission (by Section 69 of the Transport Act, 1947) the respective interests of both lessor and lessee have become merged in the B.T.C., and this clause is designed to regularise the position.

Among the miscellaneous provisions of the Bill is a clause providing for an adjustment of the financial contribution by the Metropolitan Water Board in respect of water derived by the Board from the River Lee Navigation; and a number of provisions substituting a uniform code in place of the separate powers of the railway companies and the London Passenger Transport Board in regard to such general matters as police, trespass, and byelaws.

The customary provision is also made for extending the time limit for the completion of works and the acquisition of lands in a large number of cases where the powers would otherwise lapse in the near future. All these powers were obtained before the war, mostly in the preceding decade, and the time limits have been extended from time to time since 1939 by the Minister of Transport under the emergency legislation. One of the more important works for which an extension of time is required is the extension of the Bakerloo Line from the Elephant & Castle to Camberwell Green under powers originally obtained in 1931, and an indication that this is a live scheme is given by the fact that additional powers are sought in connection with the construction of a station beneath the surface of the garden enclosure known as Camberwell Green. It does not follow that any of the works for which an extension of time is sought can be carried out, under present conditions, at any early date.

* * * *

Kowloon-Canton Railway

THE latest report of the Kowloon Canton Railway is the first to be issued since the re-occupation of Hong Kong under the civil administration, and covers the eleven-month period from May 1, 1946, to March 31, 1947. No comparison can be made with any pre-war year; the most striking differences are the introduction of the eight-hour day, the high cost of labour and fuel, and the connection with the Canton-Hankow Railway.

The following are the principal results, but it must be stressed that the operating expenditure figure is approximate for reasons later explained.

	$
Operating revenue	4,431,700.03
Operating expenses	2,226,388.73
Net revenue	2,205,311.30

The railway was sadly deficient in rolling stock when civil control was resumed, but deliveries of U.N.R.R.A. wagon material in a knocked-down condition began to arrive early in 1946, and its assembly enabled rails and sleepers to be sent from Kowloon into the interior for the completion of the Canton-Hankow Railway. The future depends on the stabilisation of the Chinese National currency, as the present exchange difficulties limit the movement of freight. It is envisaged that when normal commercial trading develops the British section will become one of the chief means of communication with the interior.

The Japanese removed large quantities of rolling stock and equipment, and operations since the re-occupation have been governed largely by the speed of both delivery of new materials and repairs. Nevertheless, a steady improvement has been effected, and by March, 1947, a service of five trains and one rail-bus daily each way was maintained.

As all records had been destroyed, it was necessary to settle

accounts by meetings of, and correspondence between, the various executives. The account books have had to be reconstituted from memory.

Shortage of timber for sleepers and buildings has been acute. Working with depleted staff, the Way & Structures Department had a most difficult task in carrying out the rehabilitation programme, but some relief was afforded by the loan of rails from the Chinese Government Railways.

By obtaining rice in bulk and arranging for its distribution, and also, for some time, providing a meal for workmen, the Administration did much to restore the health of the staff which had suffered from malnutrition.

* * * *

The Spanish Railway Centenary

A FEW weeks ago the Spanish National Railways celebrated the centenary of the first line to be opened to public traffic in Spain, and at the ceremonies, practically every Western European railway administration of importance was represented, with the noteworthy exception of the British Railways. At least one American railway, the Pennsylvania, sent a delegate. It is regrettable that the British Transport Commission did not send a member of the Railway Executive. We do not think the old Railway Companies' Association would have been so discourteous. Now that we have State railways, there is a risk that this lapse may be given a political implication that was not intended.

The celebrations, which were arranged by the Spanish Ministry of Public Works, and were attended by an important Government party, lasted for a week, from October 24 to 31. They began at Barcelona (the terminus of the first Spanish railway) with a centenary exhibition, and the party remained in that neighbourhood until the centenary day of October 28, when electric traction was formally inaugurated on the Barcelona-Mataró line. The party proceeded to Madrid on October 29, for the final stages of the celebration.

Spain was some years behind most of the other European countries in authorising railway construction, which is not surprising in view of the troubled political situation of the country, and its long Civil War. British capitalists and engineers were the first, as in other parts of the world, to awaken interest in railway communications in Spain, and George Stephenson himself visited the country in October, 1845, in connection with a proposed Royal North of Spain Railway to link Madrid with Santander and Bilbao, but the scheme was abandoned.

The first line actually to be authorised was granted to Don José Maria Roca (a Spaniard resident in London), Don Miguel Biada of Mataró, and Don José de Salamanca of Malaga. This was dated June 30, 1843, and was for a line from Barcelona to Mataró, but the definite approval does not appear to have been given until March 3, 1846. This line, which was opened with great ceremony on October 28, 1848, was the first to be built in Spain, and is the one which formed the subject of recent celebrations. Don Miguel Biada, one of the pioneers, was deprived of the satisfaction of seeing his work crowned with success, as he died on April 2, 1848. This line, which was 18 miles long, carried nearly 700,000 passengers in the first year of working and paid a dividend of 22 per cent. There was then a boom in railway shares, but actual construction proceeded but slowly, and by 1856, only 943 miles had been built. The next decade was a period of greater progress, when 3,335 miles were added, but this was followed by another stagnant period ending in 1875, during which only 245 miles were built. Thereafter, construction of the railway was very slow, and averaged only about 93 miles a year, up to the time of the first world war.

The gauge adopted for the Spanish railways was six Spanish feet (1·67 metres, or 5 ft. 6 in. English). It often has been stated that this was adopted from a strategic viewpoint, but there is no foundation for such a belief. The Spanish Railway Commission of 1844, recommended the figure entirely on technical grounds after stressing the need for uniformity throughout the country, and mentioning diversities in other countries. During the greatest period of Spanish railway construction, almost all the lines were built with French capital, and under French direction, and English enterprise, which had taken such a leading place in other parts of the world, was conspicuous by its absence in Spain. The reason was largely financial, partly because the London Stock Exchange was closed to Spanish enterprises by reason of an international dispute, and also because Spain consistently declined to guarantee interest on capital, but preferred to give a once-for-all subvention.

A long series of mergers and absorptions left the broad-gauge system by 1900 mainly in the hands of two principal companies, namely, the Northern and the M.Z.A. (Madrid, Zaragoza & Alicante). During the civil war, 1936-39, the railways suffered severely. Those operating in Republican territory were taken over by "Workers' Committees," and afterwards by a National Railway Council. At the end of the war the owning companies regained possession, but it was found that 1,000 engines and 20,000 wagons had been destroyed, besides numerous bridges and a large mileage of track. The situation of the companies was critical, and in May, 1939, the Government assumed control of the three principal companies, operating 86 per cent. of the broad-gauge mileage. This was followed by the Law of January 24, 1941, under which the State took over all the broad-gauge railways as from February 1, 1941. The companies were bought out by the payment of the annuities provided for in the concessions, and the whole of the broad-gauge system, known as the Renfe (Red Nacional de los Ferrocarriles Españoles) or National System of Spanish Railways, is operated by an autonomous corporation, nominally independent of the Government and administered by a Council of Administration in Madrid. The narrow-gauge railways are not nationalised. The total route-mileage in Spain is now 10,563, of which 7,958 miles are broad gauge (5 ft. 6 in.), and 2,838 miles are narrow gauge (mostly metre). There are about 1,000 miles of double track, and 818 miles of electrified line (398 miles broad gauge and 420 miles narrow gauge).

* * * *

East African Transport Developments

BEFORE leaving London for Nairobi after recent conversations with the Colonial Office on the expansion of East African communications, Sir Reginald Robins, East African Commissioner for Transport, gave an interview to our contemporary, *East Africa and Rhodesia*, in which he disclosed that one of the main purposes of his visit had been to discuss the urgent need for a large loan to pay for the transport requirements of Kenya, Uganda, and Tanganyika. It is intended to apply for authority to raise in London an East African Transport Loan of £17,500,000. The sum is required principally to build some 160 miles of railway in southern Tanganyika to cater for an important new groundnut producing region; a branch from the main line of the Tanganyika Railway to the Mpanda lead mine, and two deep-water berths at Dar-es-Salaam; improve the port of Lindi and develop a new port at Mikindani, south of Lindi, for the groundnut traffic; and purchase new rolling stock for the East African Railways.

It has been decided also to examine schemes for providing physical connection between the Rhodesian and the East African railway systems by two possible routes. Sir Reginald Robins said that it was hoped to obtain fairly quick results from preliminary surveys, which might show one of the two schemes to be by far the more advantageous. Some newspapers have concluded mistakenly that the projected lines are included in the loan, but this is not so, as, obviously, a more detailed topographical and economic survey of whichever is found to be the more practicable proposition will have to be undertaken before even an estimate can be made.

One of the two projected lines would begin as a prolongation of the new line running inland from Mikindani to tap coalfields and iron ore deposits in the south of Tanganyika which are being investigated. Sir Reginald Robins is anxious for the country between the new mineral fields and Lake Nyasa, thence to the railway traversing Northern Rhodesia, to be surveyed.

There would have to be a train ferry across Lake Nyasa, but the difficulties are not considered insuperable. The other route envisaged is more ambitious. It would run from near Broken Hill on the Rhodesian Railways main line in Northern Rhodesia, across the border of Tanganyika, and take a generally north-easterly course through Iringa province. The main line of the Tanganyika railway would be crossed between Kilosa

and Morogoro, and the Tanga—Arusha line of that system at Korogwe, and the new route would reach the sea at Mombasa.

Such links were forecast by Mr. J. R. Farquharson, Chief Engineer & Deputy General Manager, East African Railways & Harbours, when, as General Manager, Tanganyika Railways & Harbours, he moved approval of the amalgamation of the East African Railways in the Tanganyika Legislative Council, reported in our May 28 issue. It is interesting to study the projects in conjunction with three possible railway routes across Africa which were discussed in the article, "A Railway Lifeline Across Africa," in *The Railway Gazette* for July 23.

Mikindani will be the permanent port for the groundnut export traffic of southern Tanganyika. By the end of next year two deep-water berths should be completed there. The site where, until recently, stood only a few African huts will become soon a busy seaport. Sir Reginald Robins was sure that both the lines contemplated would be recognised as an ultimate necessity, but, even were the money available, it would not be possible to obtain enough material to build both at the same time, in view of the world shortage of rails and rolling stock. Nevertheless, he hoped that within a few years Rhodesia might obtain access to the world through "a first-class port in either Tanganyika or Kenya, and at a later stage the alternative of Mikindani or Mombasa."

The Secretary of State for the Colonies stated in the House of Commons on December 1 that His Majesty's Government and the Colonial Governments had decided that the Rhodesia-East Africa railway link should be pushed forward as rapidly as possible. Comprehensive surveys are to be made of the Broken Hill—Morogoro (or Kilosa)—Korogwe line and of an alternative line slightly west of it, taking in Dodoma (on the Tanganyika main line), Arusha (on the Tanga-Arusha line), and joining the main Kenya-Uganda line towards Nairobi. A quick reconnaissance survey will be made of the Broken Hill-Mikindani project. The question of financing construction does not arise at present, but the surveys may be financed and the surveyors provided by the Economic Co-operation Administration.

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Railway Developments in Iraq

AT the present time, the Iraqi State Railways have in hand a remarkable programme of important new works. This includes a £1,100,000 bridge over the Tigris at Baghdad to replace the existing wagon-ferry and enable all standard-gauge and metre-gauge traffic, passenger as well as goods, on both sides of that river to be concentrated at Baghdad West: and also a most imposing modern station to accommodate passenger traffic there, and house the central administration of the system. A new bridge is to be built over the Euphrates on the Karbala branch line, to replace the existing one over the Hindiyah barrage, and there is to be an extension—well over 100 miles in length—of the Baghdad-Kirkuk metre-gauge line from Kirkuk *via* Erbil to Mosul; this extension involves the construction of another large bridge over the Lesser Zab river. Considerable progress already has been made in all these undertakings, and the main contracts for the three bridges and for the station have been let to a British firm, Holloway Brothers (London) Limited.

A brief description of the Tigris bridge appears elsewhere in this issue. Its completion will enable passenger traffic from Kirkuk and the new line thence to Mosul, and from Khaniqin and the road from Persia terminating there, to run through Baghdad East and North over the Tigris into the new central station, and *vice versa*. Constructed primarily to carry a single line of metre gauge, an 18-ft. roadway and a 10-ft. footway, this bridge is designed for British Standard 19-unit loading—the equivalent of Cooper's E40—and for standard-gauge dimensions to permit of future conversion to that gauge, should this be considered desirable. The only standard-gauge line now running into Baghdad is the international railway from Turkey *via* Mosul.

The new station is outstanding in design from the architectural point of view and was described in our issue of October 22, 1948. It is understood that the new bridge over the Euphrates has been necessitated by deterioration in the masonry of the Hindiyah barrage, a defect said to be aggravated by vibration set up by trains crossing the existing bridge over it. The new bridge is sited about 1½ miles downstream from the barrage, and will consist of six through-truss spans, each 170 ft. in length. The pier foundations are of the steel-encased type of caisson described in the article on the Tigris bridge. The superstructure and substructure of the Lesser Zab bridge generally are similar to those in the Euphrates bridge, the spans, for instance, being identical, but five in number instead of six.

In fact, it is noteworthy that fabrication and erection costs of steelwork in all three bridges have been reduced by standardisation in their designs wherever this has seemed feasible. For instance, as well as the standardisation of the eleven spans for the Euphrates and Lesser Zab bridges, the stringers throughout the Tigris bridge main spans and in the 231 viaduct-approach spans are identical for the railway and the roadway. Though there is nothing new in standardisation and its recognised advantages, experience during the war of the extent to which it can be applied in bridge and other steelwork for military purposes, doubtless has suggested its wider adoption on economic grounds in this and other recent instances. It seems certain that, if foreign competition is to be met effectively in future, a policy of ever-increasing standardisation will have to be adopted. Meanwhile, it is satisfactory to note that this important matter is receiving at least some of the attention it deserves.

* * * *

Engineering Works and Traffic Operation

THE function of a railway is to carry heavy loads frequently at high speed, if possible without delay, but always with perfect safety. If a high standard of reliability is to be attained, engineering works must interfere as little as possible with the running of trains, and close co-operation between the Engineer's and Traffic Departments is essential. This co-operation is more likely to be achieved if each department appreciates the problems confronting the other; therefore, opportunities for meeting on common ground for free and frank discussion are to be welcomed.

It was in this spirit that a well-attended joint meeting of the London Section of the Permanent Way Institution and the Railway Students' Association was held under the chairmanship of Mr. A. B. B. Valentine, Member of the London Transport Executive, at the London School of Economics on November 10, to consider the question of Engineering Works and Traffic Operation. The subject was introduced in short papers by Mr. W. F. Beatty, Chief Civil Engineer's Department, London Midland Region, and Mr. J. M. Leighton-Bailey, Assistant to the Superintendent of Operation, Southern Region.

Although a great deal of work is carried out by the maintenance gangs without interfering with traffic, a speed restriction must be imposed when the stability and smoothness of the track are affected. The severity and duration of the restriction are decided by the Engineer, whose responsibility to ensure safety cannot be over-emphasised. The delays inseparable from long-continued speed restrictions, when relaying or other works are undertaken between trains, or during a series of Sunday possessions, can be minimised if a long absolute possession can be granted, and traffic diverted to alternative routes. Mechanical equipment can then be employed to the best advantage, and the completion of the work considerably expedited.

In drawing up the programme of engineering works, regard must be had to the speed limits to be imposed, and the situation and length of the restricted sections. To minimise delay the works should not be undertaken when traffic is particularly heavy. However carefully they are planned, speed restrictions must be a hindrance to the efficient operation of the train services, and the direct loss of time attributable to such causes may become very serious.

Effective advance preparation, and careful joint planning, are essential to minimise traffic difficulties, and to enable the Engineer to carry out his work. It is equally important that the line shall be handed over punctually at the start of a possession, and that the railway shall be re-opened at the agreed time. Passengers and traders alike frequently are intolerant of delays, and fail to appreciate the difficulties of railway maintenance and operation. The closest inter-departmental co-operation is, therefore, essential if unpunctuality is to be reduced to a minimum and good relations with the public maintained.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Routing of London to Fort William Trains

Walter Ibbotson & Co. Ltd.,
Asia House, 82, Princess Street,
Manchester, 1. November 22

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In view of the railways in Scotland being now under one Regional management, it would effect a saving in mileage and operating costs if the through trains from London to Fort William were routed from Euston *via* the West Coast route to Rutherglen, and thence *via* Bridgeton, Glasgow Central Low Level, and Partick, joining the present route at Dumbarton, a saving of 30-40 miles. The traffic would no doubt justify—at any rate in summer—a day express as well as the present night service.

Yours faithfully,
E. ROBINSON

Main-Line Services for Outer Suburbs

11, de Vere Walk,
Watford. November 21

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Twice since the reduction of main-line facilities at Watford Junction, L.M.R., was last commented on in your pages, appeals have been made by organisations in the town for their improvement. The most recent has just been answered with another negative, in which this time the Railway Executive and the Eastern Regional Board for Industry have joined their voices. "Operating Difficulties," mentioned in rejecting earlier proposals, are now defined more explicitly as the lengthening of journey-times entailed by long trains being required to draw up twice at the platform. It seems, then, that the Watford traveller must resign himself to being whirled through his station in an express some 90 minutes before he is able to alight there by changing at Euston and returning in an electric train that makes 17 intermediate stops.

An alternative that does not seem to have been suggested in the recent approaches would be to arrange that, where an up express calls at Bletchley it is followed after a reasonable interval by a stopping service calling at all stations to Watford, and then, perhaps, Wembley, Harrow, and Willesden. Study of the current timetables will show that there are at present few inducements to the outer suburban passenger to change at Bletchley, and so at once expedite his journey and relieve pressure at Euston. St. Albans, on the former Midland Division, is better served in this respect by connections of up trains at Bedford and Luton.

Yours faithfully,
B. K. COOPER

"Post Office Red" and "Southern Green"

Derby. November 14

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Throughout the correspondence about British Railways liveries certain essentials appear to have been smothered by the sentimental desires of fanatics whose colour-sense cannot break away from the past tradition of such sanctuaries as Swindon, Doncaster, Derby, Ashford, Gorton, Stoke, Wolverton, Glasgow, and Eastleigh. The travelling public has been overlooked, the psychological angle on the man who cleans the livery has been ignored, and the question of good or bad taste does not appear to have occurred to anyone.

Most travellers, if asked their preference, will reply: "Oh, a nice green," or "A nice blue," or any other colour, with the proviso that it shall be "nice"—not helpfully explicit but doubtless subconsciously indicating their dislike of the gaudy and obtrusive. Yet precisely how many travellers ever look at the engine, that cumbersome machine which attracts so very few of us as a thing of beauty having any sort of æsthetic value of its own, and which, therefore, takes second place to the coach at which the travelling public is forced to look for fear of getting into the wrong train or falling off the platform on to the permanent way?

Competition now having vanished, the excuse for startling colour no longer persists, except it be applied to the pillar-box or the mail van, relic of the old mail coach which *had* to be a distinctive colour. But why suggest applying a colour that shows the dirt like no one's business to a machine which emits vast quantities of smoke, steam, and oil all over itself? And why propose coupling a vivid red with a blatant complementary—malachite green? Surely a natural desire to brighten life may be tempered with editorial discretion, and if, as Mr. Herbert Read discovered many years ago, the English have no taste, is one of the nation's leading semi-technical publishing houses justified in trying to prove Britain so naïve in its choice of colour that it mistakes the precincts of the railway for those normally sacred to the theatrical artist?

If only a minority of people have a colour-sense developed by experience, while they may not be entitled to demand Patou pink engines, Molyneux grey tenders, and Hartnell green coaches, at least they have the right to demand, even from railwaymen, a colour scheme that blends in itself and is not ostentatious or vulgar against the rest of the world. As for tradition, surely it is not impossible for those whose craft is colour to evolve a scheme for British Railways as discreet and effective as the former G.W.R., L.N.W.R., Midland, L.B.S.C., North Staffs, or North British, or as impressive as the old Caledonian, Great Northern, and other companies, thereby to justify the obliteration of the past for ever.

Yours faithfully,
V. C. S.

[Our correspondent should come back to earth and nature. With Christmas coming, has he forgotten the holly with its red berries and green leaves?—ED., *R.G.*]

Railway Fares

Eynesbury, St. Neots.
November 23

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In his letter to *The Times* reprinted on page 573 of your issue of November 19, Mr. A. Wigglesworth correctly says that the falling returns of the railways are clear evidence that the excessive ordinary fares are a deterrent to travel.

This is borne out by the statistics in the same issue which show that, while all other passenger traffic decreased, excursion traffic increased by 195·51 per cent. Covering the whole, the decrease was 10·36 per cent., but by the running of excursions, train-mileage increased by 8·26 per cent., to carry a lower total number of passengers!

If ordinary fares were reduced to excursion levels by any train on any day—as Mr. Wigglesworth suggests—there would be no need to run excursions, except for football matches, and so on, at heavy additional expense. Practically all the competitive traffic would be recovered from the roads, and all the ordinary trains, each with seating accommodation for several hundred passengers, would be well filled, instead of running about the country almost empty every day in the week.

An enormous saving would be made also in petrol, street, and road expenditure, and accidents—which surely is the true object of nationalising transport in the interests of national economy.

Yours faithfully,
E. R. B. ROBERTS

Closing of Branch Lines

London, W.2. November 23

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Sir Cyril Hurcomb and Sir Eustace Missenden in recent speeches to members of the Institute of Transport have referred to the intention of the B.T.C. to consider closing "unremunerative branch lines and intermediate main-line stations" and substituting buses. Would it not be better first, however, to give such local services a chance to show whether or not they can pay by providing a reasonable service?

On most branches and local sections of main lines, the service has hardly altered in speed or frequency this century. No doubt before the motorbus appeared three or four trains a day ambling along gently at a bare 20 m.p.h. met the requirement of the community. It is, however, hardly to be expected that nowadays the public should patronise such sparse and irregular trains when the bus generally gives at worst a regular hourly service.

I once suggested to a senior operating officer that revenue might be improved by cutting the time of local trains. He was horrified, and replied that there might be a horse-box to deal with, and what then would happen to punctuality; one rather wonders whether that mentality still rules the roost. However, the few minutes spent in waiting time at every station do offer scope for the spread of local news.

On the other hand, I know a number of cases in Argentina and India where the introduction of fast, and more frequent, railcar services has turned moribund into profitable lines; in fact, in several cases it was soon necessary to replace the car by a full train to cope with the increased flow of traffic. Surely, at least, Sir Eustace Missenden has not forgotten the profitable results on the Southern Railway of the introduction

of fast and regular electric services, as from his pessimistic remarks one might almost assume.

A train service is much better equipped to deal with fluctuations in traffic, as the same train crew of three can cope with virtually any size of train, whereas the bus requires a crew of two for every 40 or 50 passengers, supposing sufficient relief buses are available. Also, whereas it is relatively easy to accommodate market passengers with bags and baskets in a train, the corresponding crowd in a bus, with probably half a dozen standing as well, becomes a trifle congested. The station, or even halt, also provides much more comfortable waiting accommodation than the roadside hedge, and in bad or wintry weather the bus has little to recommend it as against the train.

You have been preaching recently very cogently in favour of "Shorter Trains and More of Them"—in which campaign I wish you every success as a step in the right direction—but such trains cater, mainly, for traffic to and from London and a few of the bigger provincial towns. They would help, no doubt, considerably to improve passenger revenue, but I venture to assert that fast local trains at regular intervals to and from the local business and market centres would be even more paying. They would help equally to take traffic off the already overcrowded roads.

I have not touched on the thorny question of fares, and leave that to abler people to argue. It does seem common sense, though, that a dozen passengers paying a couple of shillings each are a more paying proposition than six or eight at half a crown, and they cost virtually no more to carry.

Yours faithfully,

H. LIVINGSTON

Railway Engineers' Salaries

Derby. November 25

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In your issue of November 19, the letter from "Slow Line" remarks on the absence of comment on your timely editorial note of October 15. It may not be known generally that on the London Midland Region instructions have been issued to the staff that all communications to the press from members of the staff must be forwarded through the head of the department, who will submit them to the Chief Regional Officer.

In effect, this instruction amounts to an embargo on correspondence relating to staff conditions and remuneration; otherwise I think that much emphatic endorsement of the truth of your note might have been forthcoming.

It may be, of course, that the technical staffs have abandoned all hope, being so sunk in despair as to be apathetic to any reference to their wretched conditions, and not having the wit to sidestep instructions by permitting their life partner to state their case.

As it is, wives of technical assistants have to contrive to maintain a standard of living on a salary inadequate for the level expected of professional engineers, and one wonders what comments they have to offer on this subject. For strategic reasons, I sign myself,

WIFE OF A TECHNICAL ASSISTANT

Oil or Coal Burning Engines?

2, Manor Way, Croxley Green,
Herts. November 29

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In your issue of November 26, Mr. Wells opposes the use of diesel-electric locomotives on two grounds, first, because oil supplies one day may run short, and, second, because Britain imports oil instead of producing it at home.

To support the first point, he says that in the U.S.A. reserves are dwindling. Actually, although U.S.A. production of crude oil and natural gas is constantly increasing (266 million tons in 1947 as compared with 170 million tons in 1938), at the beginning of this year her proven reserves were higher than they had ever been!

The U.S.A. has produced hitherto some 60 per cent. of total world oil production, and is becoming a net oil importer only because now her consumption is equally vast. In the future, however, an increasing proportion of world oil supplies will come from other areas, notably the Middle East. It is impossible to estimate total world oil reserves, but they are certainly large enough to outlast the diesel-electric locomotives being built today.

Also, Mr. Wells ignores altogether the great overseas producing and refining activities of British oil interests, which produce sufficient oil to meet United Kingdom consumption more than twice over. They are especially active, for instance, in Iran and other Middle East countries, in Venezuela, and the Dutch West Indies, where the refineries are fed with Venezuelan crude oil, and it was from Iran and the Dutch West Indies that Britain purchased over 80 per cent. of her fuel and diesel oil supplies during the first nine months of this year. Although some of this oil may have cost dollars, a substantial proportion certainly was purchased for sterling.

In short, the decision as to whether to use oil or coal burning engines can be made safely on technical grounds alone.

Yours faithfully,

D. G. GOFF

Traders' Season Tickets

Westminster, S.W.1. December 2

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In the article on Traders' Season Tickets in your November 26 issue, there is a curious commentary on our vaunted unification of railways. Agreement has been reached with the London Midland, Eastern, Southern, and Western Regions whereby carriage payments with one or more of these Regions may be aggregated to satisfy this condition. Are we to understand that the North Eastern and Scottish Regions disagree and are going on a different tack? Surely, the only thing that can matter now is the gross sum paid to British Railways, though the qualifying figure seems low as prices go in these days.

Yours faithfully,

AMALGAMATION

Eastern Region Locomotive Efficiency

Danish State Railways,
Copenhagen. November 18

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I read with great interest the article on page 370 in your October 1, 1948, issue dealing with the new named train, the "Norfolkman," and consider it really a remarkable achievement to perform punctually this express service despite the speed restrictions. It is not mentioned in the article how the train is composed, but, presuming the car load to be 250 to 300 tons, I find the stated coal and water consumption rather sensational. Under similar circumstances on our lines, I would consider a coal consumption of 43-45 lb. a mile a fine result.

As to the water consumption, I think that 10·4 lb. of water evaporated by 1 lb. of coal will make heavy requirements as to assorting and calorific value of the coal, and the efficiency of the boiler and firebox; presuming an ample degree of superheating the overall boiler efficiency must be about 95-100 per cent.! I would appreciate very much some further particulars as to these points.

Yours faithfully,

E. HELMO,
Mechanical Engineer

[The figures of coal and water consumption are those recorded for trains of similar load to the "Norfolkman" (262 English tons), working under similar conditions and with the same type of locomotive. They were furnished before steam heating was introduced, and are on the basis of good weather, good coal and the absence of any adverse factors which might be encountered in day-to-day working. The "Norfolkman" is worked by a modern locomotive with long travel valve gear and high-pressure boiler, and the enginemen are trained to take the greatest possible advantage of these features.—ED., *R.G.*]

CHRISTMAS TRAIN SERVICES.—As far as the rolling stock position will allow, main-line and cross-country services on British Railways are to be augmented during the few days before and after the Christmas holiday, and seat reservation facilities will be continued throughout the holiday for the first time since 1938. In Scotland, normal train services will be run during the Christmas period, though in England and Wales special arrangements will come into force on December 25, 26 and 27. A Sunday train service with reductions, or amendments, as necessary, will be operated on Christmas day and on December 26; the Sunday service, supplemented as necessary, during the afternoon and evening will be run on Boxing day. Restaurant and buffet car facilities will be maintained on most of the regular services during this period and in many cases cheap day return tickets will be issued on Christmas and Boxing days. Workmen's tickets will not be generally issued on Christmas day, except in Scotland. Passengers travelling to, or from, Ireland during the Christmas and New Year holiday periods, are reminded that sailing tickets and travel permits are required.

The Scrap Heap

Trains Stopped by Squatters

Trains on the Bombay, Baroda & Central India line from Bombay were brought to a standstill on November 19 by several thousand persons squatting on the railway track at Bassein suburban station. The squatters were demanding better transport facilities.—*From "The Times."*

* * *

Idiom's Delight

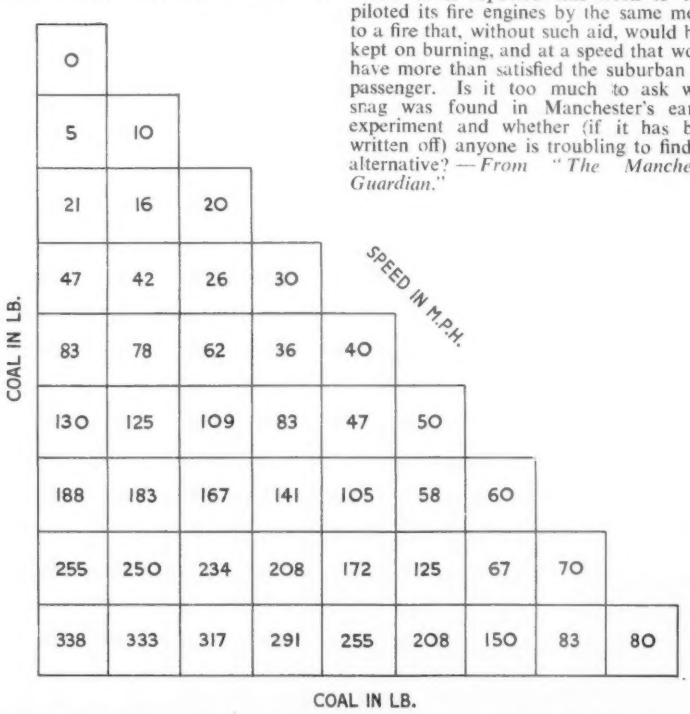
A Chinese gentleman was trying to catch a train at Victoria Station and a porter was trying to locate his baggage. The Chinaman got very upset. Finally, as the train was about to depart, he hammered on the counter and exploded in these words:

"Pretty damn seldom where my bag go. She no fly. You no more fit to run station than God's sake. That's all I hope."—*From the "Burntisland & Hall Russell Shipyard Journal."*

* * *

Coal Consumption and Locomotive Speed

In view of the need to conserve coal consumption on the railways, a graph used by Colonel Harold Rudgard in his recent presidential address to the Institution of Locomotive Engineers is of particular interest and is reproduced below. Colonel Rudgard explained that speed of traffic working seriously affects coal consumption, and he showed examples of the amount of coal used in overcoming signal delays in the graph. The example he took was a train of 425 tons, and the graph shows that, if speed is reduced from 60 m.p.h. to 10 m.p.h. by a signal check, and the train is accelerated to its former speed, the extra coal consumed is 183 lb.



A graph used in Colonel H. Rudgard's recent presidential address to the Institution of Locomotive Engineers showing the effect of locomotive speed on coal consumption

"Old Soldiers Never Die"

Skye.—Marine Hotel, Kyleakin. Lic. Ten mins. L.M.S., Kyle of Lochalsh. Daily steamer service with L.N.E.R., Mallaig. And Heathmount Hotel, Kyleakin, Skye. Same Prop. and Personal Management.—N. MacRae. Phone Kyleakin 5.—*From "The Glasgow Herald" of December 2, 1948.*

* * *

Christmas Toys

Thirty girls of British Railways, Western Region, Central Enquiry Bureau, at Paddington, in response to the London Hospitals' appeal for Christmas toys, have devoted their leisure hours to making wolly toys and animals, dolls' furniture, and Donald Ducks with materials gleaned mostly from rag bags and bits and pieces collected for the purpose. The toys will be distributed to children in the St. Mary's Hospital Children's Ward, Paddington, on Christmas Day.

* * *

The Fogbound Bus

Manchester's trams used to get us home with reasonable satisfaction: if we were crowded, less comfortable than usual, and a little delayed, that was the fog and it had to be accepted. But from the first beginnings of the turnover to buses it was clear as an evening in June that the bus would fail when it came to fogs.

A few years ago hopeful experiments were made with a pilot motor-cyclist, whose guiding lights enabled not one bus but a convoy of buses to make its way "home" from the city—often with a long tail of other traffic which was otherwise lost. If this seemed to promise a regular service for emergencies—and answer a real argument against the bus—the intention has gone astray.

Salford is reported this week to have piloted its fire engines by the same means to a fire that, without such aid, would have kept on burning, and at a speed that would have more than satisfied the suburban bus passenger. Is it too much to ask what snag was found in Manchester's earlier experiment and whether (if it has been written off) anyone is troubling to find an alternative?—*From "The Manchester Guardian."*

100 YEARS AGO

From The Railway Times, *Dec.* 9, 1848

Messrs. England's Light Locomotive Engine.

Since our last this engine has been employed in working the trains upon the Horsham branch line of the London and Brighton Railway, which diverges from the main line at Three Bridges station, having stations at Crawley and Foygate, at which the train calls each way. The traffic averages four carriages per train, which has been worked by this engine with perfect regularity and dispatch, performing the distance, 9 miles from station to station, including stoppages, in 15 minutes.

She has also been running with goods during the intervals between the passenger trains; and on one occasion she took, from Three Bridges station to Horsham, five waggons loaded with goods, 50 tons, attaining a speed of 30 miles per hour, and ascending an incline of 1 in 200, for 1 mile, without any perceptible difference of speed. In this trip she was under the immediate guidance of Mr. Ridley, one of Mr. Craven's assistants in the locomotive department, who expressed himself perfectly astonished at the performance; in fact, when the engine was first attached to the five waggons, no one present, including Mr. England himself, ever imagined that she would have got away with them, and it was arranged by Mr. Savage, the station-master, that one-half was to be left while she went on with the remainder; but, much to the surprise of all, she went away with the whole of the 50 tons in gallant style. This seems to us a wonderful performance, and far exceeds the statement we published last week, and must be highly gratifying to the Directors of the line, as it cannot fail to be to the manufacturers of the engine.

A continental engineer, Mans, has got a machine for tunnelling the Alps. He calculates on piercing Mont Cenis in three years—working on both sides.

A Railway Solicitor's Bill.—The bill of charges of the late solicitor to one of the southern railway Companies, contained 10,000 folios, has occupied twelve months in the process of taxation, and amounted to 240,000*l*.

* * *

No Nonsense

Hearing that all the railway porters at Pötvala in Finland had come out on strike because a lamp-attendant had lit a cigarette with a Belgian match, all the porters at Little Kimpton came out in sympathy. Asked what it was about, a Little Kimpton porter said: "That's none of our business, but we won't stand any nonsense."—*"Beachcomber" in the "Daily Express."*

* * *

Tailpiece

The Window Cleaners

We are the window cleaners,
And we are the bringers of light,
Working around the station,
Dispelling the gloom of night.

With wonderful, magic fingers
We brighten up every room,
Working our miracles daily,
Conjuring light from gloom.

We toil in all kinds of weather,
We Knights of the Shining Pane,
In winter and summer, and never
Is labour like ours in vain.

We come and we go, as silent
As dawn on the heels of night,
Fulfilling creation's mission,
For we are the bringers of light.

A. B.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Transport Co-ordination Bill

In moving the second reading of the Transport Co-ordination Bill in the House of Assembly recently, the Acting Minister of Transport said that in the course of years various bodies had been established in connection with transport, and their activities often overlapped. The object of the present measure was to abolish the National Roads Board, the Central Transportation Board, and the Civil Aviation Council. In their stead a National Transport Commission would be instituted.

The objects of the Commission would be to promote and encourage the development of transport in the Union, and, where necessary, to co-ordinate various phases of transport to achieve the maximum benefit and economy of transport services to the public. The Commission would deal with transportation generally and with the question of road safety, and would recommend legislation where necessary, both to the Minister and to the Administrators of the Provinces. It would advise local road transportation boards and would advise similarly on matters connected with civil aviation.

The Bill now has been passed and comes into effect as the Transport Co-ordination Act, No. 44, of 1948. Under Section 3 of the Act the Governor-General shall appoint a body to be known as the National Transport Commission, which shall consist of not more than seven members, one of whom the Governor-General shall designate as Chairman. The Governor-General shall appoint as members of the commission, the Secretary for Transport; one member whom he shall designate as Commissioner for Road Transportation; and one member whom he shall designate as Commissioner for Civil Aviation.

PAKISTAN

New Lines Projected

The Ministry of Communications (Railway Division), Pakistan, has sanctioned the engineering and traffic survey being carried out by the North Western Railway of a 20-mile broad-gauge line connecting Wasawewala, the Kasur-Lodhran section, and Amruka, between Ferozepore City and McLeod Ganj Road.

Contemplated Purchase of Japanese-Built Locomotives

To investigate the prospects of obtaining metre-gauge locomotives and spare parts, Mr. A. H. Khan, Chief Mechanical Engineer, Eastern Bengal Railway, is leaving shortly for Japan. The Japanese Mission, which recently visited India and Pakistan, held out promise of ability to export railway engines in considerable numbers.

INDIA

All-Metal Coaches

The first of the hundred all-metal third class coaches ordered by the Railway Board was completed by the Hindustan Aircraft Limited, Bangalore, on August 15. The Board expressed satisfaction at both the design and finish. The structure is of stressed skin type and built of steel specially treated to resist corrosion and ensure long life. The coach, with its thin structure, made possible by the use of steel, provides for more room inside than in the present wooden coaches. Another special feature is the provision of electric fans. It is expected that about five coaches will be completed by the end of December.

Minister Inspects Delhi Station

Mr. K. Santhanam, Minister of State for Railways & Transport, accompanied by officials of the Railway Board and the Eastern Punjab Railway, visited Delhi Main railway station on October 16, and made a detailed inspection of the various branches of railway working. He discussed with railway officials the steps that he desired taken to improve the efficiency of the various sections of Delhi Main.

CANADA

Future of Quebec Central Station

Representatives of the Canadian Pacific and Canadian National Railways have advised Quebec City municipal authorities that they do not favour a plan to transfer Quebec Central Station to the outskirts of the city. The city authorities had put forward the plan to improve central area traffic by eliminating a series of level crossings in the centre of the city. Various proposals have been studied by a municipal railway committee, on which the C.P.R. and C.N.R. are represented. The railway representatives have informed the authorities that a new station in western Quebec City would cost approximately $15,000,000 and the work would take years.

Canadian Pacific Orders

During the period September 20-October 20, the Canadian Pacific Railway received 313 70-ton drop-bottom gondola cars from the Eastern Car Company, bringing to 484 the number now received of an order for 500 cars of this type. Also received were six P-2-k Class locomotives from the Montreal Locomotive Works, bringing to 10 the number received of an order for 12, and eight 1,000-h.p. diesel-electric shunting locomotives from the Baldwin Locomotive Works, bringing to nine the number received of an order for 11.

New orders have been placed for 500 50-ton steel-sheathed wood-lined box cars from the National Steel Car Corporation; five 1,500-h.p. diesel-electric road shunters, three 1,000-h.p. diesel-electric shunters, eight 1,500-h.p. diesel-electric unit "A" freight locomotives, and four 1,500-h.p. diesel-electric unit "B" freight locomotives from the American Locomotive Company; and three 2,000-h.p. diesel-electric passenger locomotives from the General Motors Corporation.

ITALY

Reconstruction of the old Florence—Bologna Line

The most difficult item in the whole work of reconstruction of lines damaged or destroyed during the war has been the restoration of the old single-track line between Bologna and Florence. At one time, the idea was even to abandon the derelict line, particularly as the comparatively new double-track line, the *direttissima*, between Bologna and Florence is shorter and easier to work. Subsequently, however, the reconstruction was taken in hand, but difficulties delayed progress. Details of the restoration of the "Porrettana," as the line is known, after Porretta, a once-famous health resort which it serves, were published in the October 24, 1947, issue. On the resumption of services between Bologna and Porretta Terme (37·6 miles) on October 8, 1947, a further section, as far as Pracchia, 9·3 miles south of Porretta, was restored, and was opened a few months ago. At Pracchia, the summit of the line is at 2,213 ft. Early in October followed the opening of another short section reaching from Pracchia as far south as Corbezzi, at an altitude of 1,371 ft. Corbezzi is only 4·3 miles from Pracchia, and the fact that it took many months to complete the reconstruction demonstrates the considerable difficulties which had to be overcome because of the spiral tunnels, steep gradients, and severe curves. Work is in hand now on the last stretch, 11·2 miles, to Pistoia, the junction of the Florence—Lucca line. On this last section also the difference of level is considerable, as Pistoia is at an altitude of 207 ft.

SPAIN

Gauge Conversion of Frontier Line Proposed

Our Spanish contemporary, *Ferrocarriles y Tranvias*, reports that proposals have been made for the conversion to the European standard gauge of the metre-gauge line of the Sociedad Explotadora de Ferrocarriles between Hendaye, on the French border, and San Sebastian. This would enable French goods trains to work through to San Sebastian and avoid transhipment at the frontier. The company owns 24 miles of electrified line, independent of the broad-gauge main line of the Spanish National Railways, between Hendaye and San Sebastian.

SWITZERLAND

Track Renewals

According to the Federal Railways 1949 budget, track renewals will absorb a comparatively high expenditure, fr.40,740,000, in 1949, or about 45 per cent. more than in 1947 (fr.28,135,943). This increase results from the faster pace adopted in track renewals to catch up on work deferred because of the war. The Federal Railways normally renew about 81 miles of main line track yearly; the average has been increased to 90-93 miles. In 1949 90½ track miles of main line are to be renewed, as compared with 80 track miles in 1947. For main line renewals only new materials (ballast, sleepers, rails and fishplates) are used. Where serviceable, the old materials thus reclaimed are used for renewals on branch lines. These renewals will extend over 28·6 track miles in 1949, as compared with 14¾ track miles in 1947. On a further 23 track miles the ballast only is to be renewed and the number of sleepers increased. These improvements extended over 28¾ track miles in 1947.

DENMARK

Accidents to Great Belt Ferries

Early on October 21, *Fyn*, one of the ferries used on the crossing of the Great Belt between Korsor and Nyborg, struck a submarine obstacle shortly after leaving Nyborg. The ferry was holed and began to sink. The crew managed to get the vessel back to the ferry harbour at Nyborg, where it sank at one end. Because of a storm it was not possible at once to ascertain the nature of the obstacle, which has appeared suddenly in the normal sailing route, used many times daily.

On the same morning, almost at the same time, another ferry, *Korsor*, after

having left Korsor, was driven off its course by a severe storm and ran aground. The situation had become grave, as two ferries were put out of service, and a third was undergoing repairs, so that only two diesel ferries and an older steam ferry were available besides the special motorcar ferry. It was decided therefore to stop all conveyance of goods across the Belt, and consideration was given to the stoppage of the "Lyntog" trains.

The situation improved during the day, when the *Korsor* was refloated, and an inspection proved it to be undamaged. The *Fyn*, which is the newest of the vessels, was docked immediately, and it was hoped that the repair would take only a fortnight. The machinery suffered no damage, and there were no casualties.

FRANCE

Effect of the Strike on the Railways

The miners' strike seriously affected the railways. Although on October 27 it was officially stated that, apart from a few minor local incidents, the railway situation, generally, was normal, with no change in the train services, it was announced later that the preservation of coal stocks necessitated a curtailment of certain services, and mainly slow trains, though some certain international trains, too, would be affected. These curtailments became effective as from November 1. As from the same date, heating of all but international trains was discontinued. It was explained officially that in view of the seasonal decrease of passenger traffic between the beginning of November and just before Christmas the effects of these curtailments would be mitigated. By the end of October, the general feeling was that the situation would not deteriorate as far as the railways were concerned. This optimistic view was partly a result of a radio speech by M. Pineau, Minister of Transport, on October 26.

The coal situation of the French railways was outlined as: Stocks available on October 20, 715,000 tons, daily consumption 20,140 tons, which meant that the stocks would cover requirements for 35½ days. These figures may be compared with those relating to the end of September. On September 30, the railways had 935,541 tons of coal on hand, and the daily consumption then, with more services operating, averaged 22,823 tons, allowing for a margin of 39 4/5th days.

AUSTRIA

Traffic Crisis

The removal of rolling stock by the Russians has brought about a transport crisis because of the unavoidable curtailment of services. This contrasts with the favourable development which was recorded in our June 4 and October 22 issues. Services have been cut by about 30 per cent., many passenger and goods trains have been discontinued, and modifications in the fast international services have had to be adopted. As many locomotives and vehicles as possible are being drafted from the western zones into the Russian zone in an attempt to redress the balance.

Arrangements to reduce wagon turnround have been introduced and repair shops are reported to be working night and day. A drive to accelerate the building of new wagons also is under way.

Removal of Rolling Stock by Russians

As was recorded in our November 12 issue the Russians claimed 540 locomotives and 5,775 wagons from the Federal Railways as reparations. Removal of such material from Austria continues. An agency report states that the locomotives and wagons are being repaired at Csepel in Hungary and then offered for sale to Western European countries for dollars or Swiss francs. It has been proposed at an Allied Council meeting in Vienna that the Soviet authorities should be asked to suspend all withdrawals from Austria.

GERMANY

Hungarian-Built Wagons Ordered

With reference to the paragraph in our October 22 issue, in which it was stated that Hungary was to manufacture 900 goods wagons for the bizone of Germany at a purchase price of $2,250,000, we are informed that the order was not accepted by the Central Board of Hungarian Heavy Industries.

POLAND

Railway Material from Sweden

As an outcome of the trade agreement between Poland and Sweden, the Polish State Railways have placed substantial orders for railway materials of all descriptions with the Swedish industry. The value of the orders so far is reported to total about £25,000,000.

Publications Received

A History of Cast Iron in Architecture. By John Gloag and Derek Bridgwater. London: George Allen & Unwin Limited, 40, Museum Street, W.C.1. 11¼ in. × 8¼ in. 395 pp. Fully illustrated. Price 63s.—Cast iron is a material with not only an interesting history, which is virtually the history of the British industrial revolution, but also great potentialities. It played a leading part in the structural design of early railway bridges and stations, and a representative selection of illustrations and drawings of them is included in this book. The section of the text devoted to cast iron in railway architecture will interest the railway historian as much as the architect. One of the last great buildings in which a considerable amount of cast iron was used was Woodside Station, Birkenhead. More recently, cast iron has been used with much success in underground railway tunnel segments.

A Review of Available Information on the Significance of Roadstone Tests: Road Research Technical Paper No. 10, published by the Department of Scientific & Industrial Research Road Research Laboratory. 16 pp. Paper cover. 9½ in. × 6 in. Price 6d.—This summary of many reports compiled during the 50 years that tests have been carried out in this country, to measure the mechanical properties of various stones for road metalling and similar uses, aims at determining the extent to which these test results correlate with the behaviour of the aggregates in actual service. Among the conclusions arrived at are: (a) that some correlation does exist between results of attrition, abrasion, impact, and crushing strength tests, but the results of one test do not necessarily indicate those of another; (b) tests on the actual aggregates generally show good correlation with their service behaviour; (c) British Standard aggregate crushing tests fairly represent the crushing resistance of an aggregate, but it is desirable that similar standard tests be developed to measure resistance to abrasion and impact. Available information, however, is considered to be sufficient to justify the adoption of approximate lower limits of crushing strength and other resistances, as a general guide in the selection of aggregates for waterbound, concrete, and bituminous roads.

The 727th Railway Operating Battalion in World War II. New York: Simmons-Boardman Publishing Company, 30, Church Street. 11¼ in. × 8½ in. 102 pp. Illustrated. Price $5.—This well-produced book is a historical record of the 727th Railway Operating Battalion, Transportation Corps, Military Railway Service of the United States Army, in the war, and editorial notice is given to it on another page of this issue.

Alloys for Gas Turbine Construction.—The Mond Nickel Co. Ltd. has published a 20-page booklet, entitled "The Nimonic Series of Alloys," on the application of these to gas turbine construction. The essential metallurgical problem of the gas turbine is the provision of rotor and stator blades and other internal parts capable of withstanding temperatures exceeding 750° C. without distortion, creep deformation or excessive oxidation. The Nimonic series of alloys have been developed from the well-known nickel-chromium alloys first discovered 40 years ago and are intended for use under steady load at high operating temperatures. They have been closely linked with the development of the aircraft gas turbine, both for jet and airscrew propulsion, and will continue to be of importance in further applications of the gas turbine to railway, marine, and other forms of transport and stationary power production. The booklet contains tables and diagrams embodying time, load, strain, and temperature factors which show the mechanical properties of the alloys.

Wilco-Wiggin Thermometal.—The large range of uses for the simple device of a Thermometal—a strip composed of two metals of different expansion coefficients bonded together—and the extremely complex mathematics governing their curvature, are illustrated by this catalogue. The publisher is Henry Wiggin & Co. Ltd., of Birmingham, which firm has been associated with the H. A. Wilson Company, U.S.A., in the manufacture of Thermometals since 1937. Uses for the range of Thermometals manufactured include temperature indication and control, and control of a function by the auxiliary heating of the Thermometal. Grades are made for high and low temperature conditions, and for use where anti-corrosive properties are important. Metals used in manufacture include steel, manganese, brass and nickel.

Steamship Services and Register of Shipping. Issued by the Railway Executive, 222, Marylebone Road, N.W.1. 8½ in. × 5½ in.—Though it has been prepared for internal use and is not available to the general public, this book is available to overseas railway administrations. British Railways steamship services are set out in tabular form and there is a register of shipping operated by each Region, which gives the principal particulars of the various vessels.

The Channel Tunnel Co. Ltd.

Statement made to a Joint Committee of both Houses of Parliament on December 1, 1948, by Sir Herbert Walker, K.C.B., Chairman of the company

ON December 1, Sir Herbert Walker, K.C.B., Chairman of the Channel Tunnel Co. Ltd., and former General Manager of the Southern Railway, made a statement to a Joint Committee of both Houses of Parliament in which he dealt first with the past history of Channel Tunnel schemes, followed by a description of the tunnel as now proposed, its practicability and estimated cost, and the financial aspects of such a scheme after the tunnel has been brought into operation.

Sir Herbert Walker said that companies for the promotion of a Channel Tunnel were formed in England and France in the early 1870s and during most of the intervening period. The original English company in 1875 obtained an Act permitting it to undertake experimental operations at St. Margarets Bay, Dover, but no practical work was done, and the company was bought out by the Submarine Continental Railway Company in 1886. This company was formed in 1881, with a capital of £250,000 increased to £275,000 in 1886, to enable it to purchase and absorb the Channel Tunnel Company. In 1887 the company changed its name to the Channel Tunnel Co. Ltd., and in 1897 reduced its capital to £91,351, at which figure it now stands.

During the present century, the question of the construction of a tunnel has come before Parliament on three occasions, namely, 1906, 1913, and 1929, and in each case the question has been referred to a special committee. Each committee has reported in favour of the scheme, although in each case the Government of the day decided otherwise. In the first two cases, the scheme was turned down on the score of public safety, while in 1929 the Government came to the conclusion that there was no concensus of opinion on the part of industry and trade that the tunnel was necessary from an economic point of view.

Effect on Railway Finances

As General Manager of the Southern Railway it was my privilege to give evidence before the committee which sat in 1929. After explaining that the Southern Railway was entirely in favour of the tunnel I had to point out, however, that the bringing into operation of a tunnel would have a serious effect on the finances of the railway company. In the first case, millions would have to be spent in reconstructing many of the overbridges, tunnels, and stations between Dover and London to accommodate the larger coaches and vans in use on the Continent, and, even if this work were carried out on the main line from London to Dover, the coaches and vans built to the Continental gauge could not pass over other lines in Great Britain.

Although the width between rails is only $\frac{3}{8}$ in. more on the Continent than in this country, the Berne gauge, which is in use throughout the Continent, except in Russia, Spain and Portugal, admits of the coaches and vans being about 9 in. higher and wider than does our loading gauge. Then, again, the railway company would have no further use for a large proportion of its fleet of passenger and cargo vessels, valued then at about £3,000,000, and would lose a net revenue of between £400,000 and £500,000 per annum earned by those vessels. The railway company also would have to honour its agreement with the Dover Harbour Board, under which it guarantees a fixed income to the Board from its poll tax and other dues, which would disappear if the tunnel were built. Both the British and French railway companies would have to build a special fleet of electric locomotives to haul the trains through the tunnel, and in all probability a special power station would have to be constructed to provide the necessary current.

During the past 20 years, however, circumstances have arisen which have considerably alleviated the situation, and which should assist materially in the future consideration of the scheme. The majority of Continental countries have agreed to construct coaches and vans for inter-Continental traffic suitable to run over British railways, and, indeed, they have already constructed a number of coaches and vans which are circulating in this country by means of the train ferries. Then, again, the vessels and the revenue therefrom previously owned by the Southern Railway will now be in the same ownership as the Channel Tunnel. The line from London to Dover most likely will be electrified by the time the tunnel is made, and the same electric locomotives that haul the trains from London to Dover can take the same trains through to the French terminal. The Grid will be able to provide the necessary supply of electricity.

Route and Description of the Tunnels

The new Channel Tunnel Railway will leave the existing main line from London to Dover at a point three miles on the London side of Folkestone, and it will proceed over open country to the foot of the hills just east of Folkestone, where each line will pass into a separate tunnel constructed in the lower chalk stratum which outcrops at this point. These tunnels will proceed on a falling gradient parallel to the coast until they reach a point near Dover, where they will turn right and pass under the sea on a series of easy gradients until they commence to rise again as they approach the French coast near Sangatte. On reaching the surface five miles beyond Sangatte the tunnels will emerge into a double line of railway which passes through open country until it joins the main Calais-Paris railway near Boulogne.

The total length of the Channel Tunnel Railway will be 44 miles, divided as follows: Open railway on the English side, 3 miles; the actual tunnels, 36 miles, of which 24 will be under the sea and 5 miles in the open country on the French side. In the first case, it is proposed to build a pilot tunnel 12 ft. in dia., the object of which is partly to confirm the opinions of geologists in their view that the lower chalk stratum is continuous throughout, but chiefly to ascertain whether or not there are any serious faults or fissures. This pilot tunnel ultimately will be enlarged to form one of the main railway tunnels.

The diameter of the main tunnels will be approximately 17 ft. as compared with the 18 ft. 6 in. allowed for in the original scheme. They will be lined throughout with ferro-concrete segments. In addition to the main tunnels, however, there will be a drainage tunnel from 7 to 10 ft. in dia. from a point east of Dover to Sangatte, about 20 miles. Although the scheme is called the Channel Tunnel scheme there will really be three tunnels, namely, two single-line train tunnels and one drainage tunnel. The depth of the main tunnels under the bed of the sea varies from 95 ft. to 170 ft., and the maximum depth of water on the route of the tunnels is 165 ft.

Practicability of the Tunnels

As already stated, the tunnels will be cut throughout their whole length in the lower chalk formation which runs from coast to coast. This stratum, which has a mean thickness of about 150 ft., is in the shape of a saucer, and might have been formed by some far-seeing providence for the purpose to which it is now proposed to put it. The main, and practically the only, difficulty, is to know whether this stratum is free from faults of sufficient dimensions to prevent or impede seriously the construction of the tunnels.

To test this the following explorations have been carried out: In 1874 the French company obtained a concession from the French Government to construct a shaft near Sangatte and to drive a gallery under the sea for a distance of 1½ mile. The work was duly carried out. In 1881 the South Eastern Railway Company obtained an Act giving it power "to make experimental borings and to carry out certain other works in connection with a tunnel." A shaft 160 ft. deep was sunk near the Shakespeare Cliff and a tunnel 7 ft. in dia. was formed for 2,015 yd. under the sea.

In 1921, a tunnel 12 ft. in dia. was excavated near the Martello Tunnel where the lower chalk stratum outcrops. Other headings have been made in the same area. All these works show that the lower chalk is easily manipulated and that the tunnels retain their shape although unlined. No serious difficulties were experienced from infiltration of water.

In 1875-76 a large number of borings, over 7,600 in fact, were made into the soil under the sea between Dover and Sangatte, and no fewer than 3,267 of these penetrated into the lower chalk, in which the proposed tunnels will be constructed. Only last July, two French geologists made a voluminous report on the geology of the Channel, and they came to the conclusion that the route chosen for the tunnel, between Dover and Sangatte, was the only feasible one, that the danger of infiltration by water was remote, and that the lower chalk stratum is continuous throughout. Nevertheless, it cannot be stated definitely that the scheme will be free from trouble until the pilot tunnel is completed throughout.

The Estimated Cost

In the early part of this century the cost of making a Channel Tunnel between England and France was estimated at about £16 million. In the report of the Channel Tunnel Committee of 1929, the estimated cost of the pilot tunnel is shown at £5,600,000, and of the main tunnels and their equipment, together with the drainage tunnel, at £25,300,000, a total of £30,900,000. Various estimates have been given of the present-day costs and I have heard as much as £100,000,000 mentioned. The fact that the Continental railways have agreed to build rolling stock to meet the British gauge, and thus enable the diameter of the tunnel to be reduced from 18 ft. 6 in. to 17 ft. will be a great advantage.

(*Continued on page* 673)

Tigris Bridge at Baghdad, Iraqi State Railways

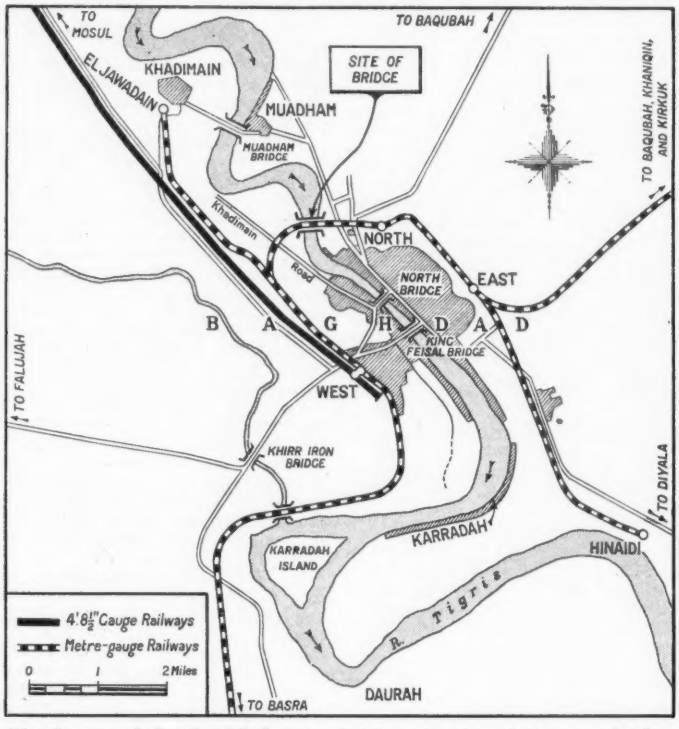
A million-pound rail-and-road structure with an overall length of 1⅛ miles involving the use of some 8,000 tons of steelwork

AT the present time the Iraqi railway system is divided by the River Tigris into two groups of lines, one west and the other east of that river. Both groups are centred on Baghdad, where the passenger stations serving them are nearly two miles apart and connected by a road which crosses the river. The two groups are linked by a wagon-ferry north of the city, enabling goods traffic to pass from one to the other without break of bulk.

To obviate the recurring cost and inconvenience of operating two unconnected passenger terminals and the wagon-ferry, the railway administration has had plans ready for some time past, to replace the wagon-ferry by a bridge, which would permit the traffic of the eastern group of lines, passenger as well as goods, to be dealt with at the western group station, Baghdad West. These plans entail the concentration of traffic there from and to the following lines: (*a*) the standard-gauge international line from Turkey and Syria *via* Mosul; (*b*) the metre-gauge line from Basra; (*c*) the Baqubah, Khaniqin (for Persia), Kirkuk line; and (*d*) the extension of this line now under construction through Erbil to Mosul, both metre gauge; (*a*) and (b) form the western, and (*c*) and (*d*) the eastern group of lines. The existing station at Baghdad West could not accommodate such traffic, and a new one therefore was included in the administration's plans. Their execution was delayed by the war, but construction of both the bridge and the station now is in hand. The station was described in our October 22 issue, and the following is a brief description of the bridge.

Though intended in the immediate future for a single metre-gauge line only, the bridge is designed for standard-gauge loads and clearance dimensions, in case subsequent conversion to that gauge may be considered desirable. Its strength is, in fact, up to British Standard 19 units, the equivalent of Cooper's E40 load standard.

The bridge was constructed primarily by the railway administration to form a vital link in its system, but it also carries a roadway and footway to meet the needs of the Public Works Department, in connecting expanding residential areas centred on the Baqubah and Khadimain roads east and west of the river respectively.



Sketch map of the Baghdad area showing the site of the new bridge in relation to the various lines, stations, and city

The diagram on page 666 of the side elevation of the bridge shows its general design, lengths of anchor and cantilever-cum-suspended spans, depths to which caisson foundations have been, or are being sunk, and the rail and road approach viaducts.

Approach Viaducts

As work on the approach viaducts is far advanced, they may be described first. Approaches to the river spans have to be in viaduct, as opposed to embankment, due to the great volume of water that spills over the river banks in time of flood. So as to reduce the lengths of the road viaducts on both banks, they are constructed separately from the railway approach viaducts to enable the former to run down on a gradient of 1 in 25, and so reach ground, or near-ground level, very much sooner than is possible in the case of the railway with its essentially easy gradients; actually these grades are about 1 in 200 on the west bank, and 1 in 240 on the east. The rail approaches as constructed, therefore, are each over 2,100 ft. longer than those for the road, and the aggregate length of the four approaches is nearly 7,000 ft., of which 6,500 ft. are in viaduct, consisting of 231 spans each of about 25 ft., and five road underbridge spans varying in length from 50 ft. to 80 ft.

A Soil Problem

The soil on both banks is extremely treacherous, and it was originally intended to provide concrete-pile foundations under the concrete-block pedestals supporting the viaduct trestle piers. Before *in situ* piling began, however, the presence of considerable quantities of gypsum was detected in the soil. This sulphate had been found in Baghdad to cause serious disintegration in concrete when placed in comparatively thin sections, as in piles. For this reason it was decided to substitute massive raft-beams, giving a lower ratio of surface area to volume and providing the greater bearing area required, and to use sulphate-resisting cement. These raft-beams run not only transversely beneath each trestle, but also longitudinally on both sides, between the trestle pedestals, in continuous lengths of 200 ft. This type of foundation is capable of bearing loads up to ¾-ton per sq. ft.

The trestles are single-bent A frames, and the standard 25-ft. stringers between them consist of 28-in. by 8½-in. plate girders under the railway, and 22-in. by 7-in. rolled-steel beams carrying the roadway. It is important to note that, so as to standardise these two designs of stringer throughout the whole bridge, the main spans over the river also are designed with approximately 25-ft. panels, enabling similar stringers to be used in them.

Main Piers and Caissons

The concrete piers supporting the main spans are of the partly-pedestal type, as our illustrations show. They are founded on structural steel caissons filled with concrete up to low water level; they measure from about 60 ft. to 85 ft. 6 in. under different piers, as required. In plan, the caisson dimensions are 56 ft. long by 19 ft. wide, and, so as to leave two semi-circular and three rectangular voids or working chambers, four concrete walls divide each caisson transversely. Sinking is being effected under compressed air, and three pier caissons have been constructed, with pumping chambers housing pumps for the water supply to the railway yard at Shalchiya.

Main Spans

The anchor-cantilever through trusses of the main spans, arranged as shown in the elevation diagram, have a maximum depth of roughly 35 ft. Looking westwards along any one of the main spans there is on the left, or south side, a 10-ft. footway cantilevered out beyond the left-hand main girders. Next to the footway, but inside these main girders, is an 18-ft. roadway (measured between kerbs), and, separated from the roadway by a steel lattice fence, is the single-line metre gauge railway. Between the fence and the right-hand line of main girders, there is, however, the standard international clearance dimension for 4 ft. 8½ in. gauge, about 16 ft. All the trusses, cross-girders, and stringers in the main spans are of high-tensile steel, B.S.S. 548.

Already, work on the approach viaducts is well in hand, and four out of the six caissons and piers have been completed. Some 60 per cent. of the main-span steelwork is now at site, and the westernmost suspended span has been erected on falsework in its final position, as shown in one of our illustrations. At the present time work is progressing on the erection of the adjacent cantilever-anchor girders. It is expected that the whole of this important undertaking, of which the total cost is £1,100,000, will be finished in about 12 months' time.

The consulting engineers to the Iraqi State Railways are Messrs. Coode, Vaughan Lee, Frank and Gwyther, of Westminster, who are, therefore, responsible for approval of the design and for the general supervision of the work of constructing this great bridge.

The main contract for it is let to Holloway Brothers (London) Limited. This firm is carrying out the whole of the work at site, including all caisson and pierwork, the foundations for the approach viaducts, and the assembly and erection of the entire steelwork for the main and viaduct spans. The aggregate weight of steel in the whole structure is approximately 8,000 tons.

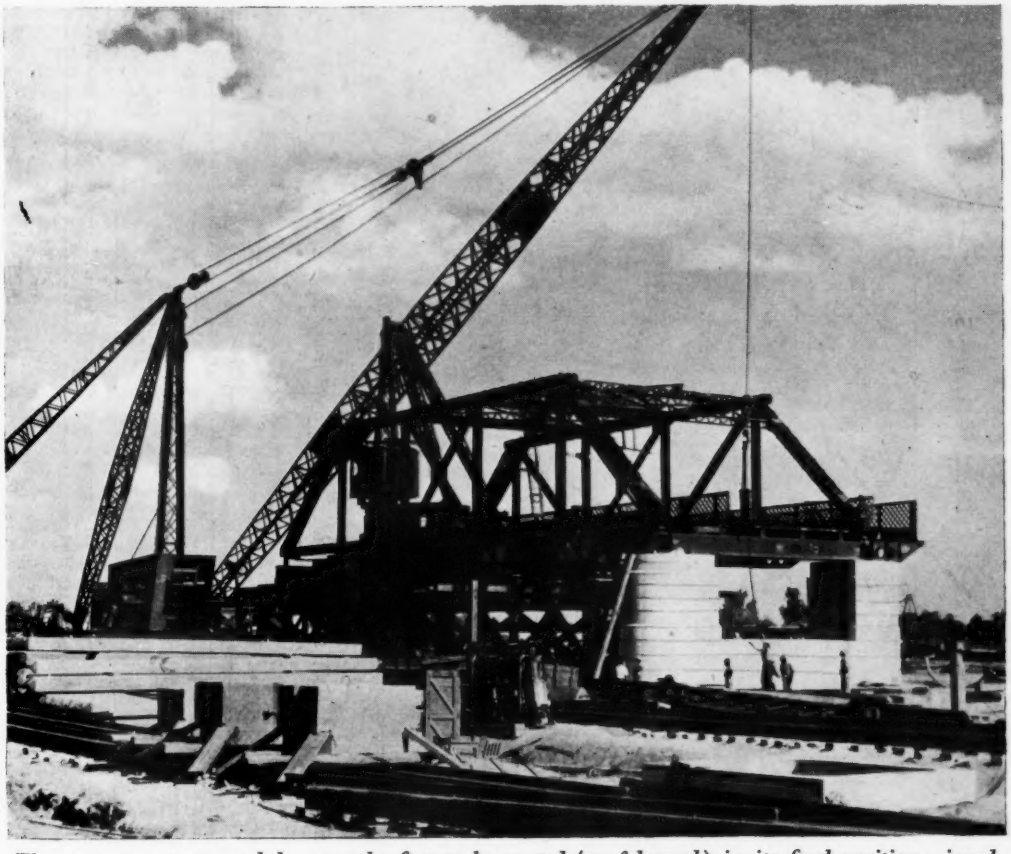
Fabrication of the steelwork in Great Britain was entrusted to the following sub-contractors:—

(1) Steelwork in caissons: Dorman, Long & Co. Ltd.

(2) Steelwork in main spans: Cleveland Bridge & Engineering Co. Ltd.

(3) Steel trestles and stringers in the four approach viaducts: Braithwaite & Co., Engineers, Ltd.

It is of interest to note that Holloway Brothers also has contracts for the new central station at Baghdad, a new bridge for the Karbala branch line over the Euphrates at Hindiyah (six spans of 170 ft.), and for another big bridge over the Lesser Zab river on the Kirkuk-Mosul extension (five spans of 170 ft.). All the 11 spans for these two bridges are identical, thus providing a further measure of standardisation. These various works form the subject of an editorial article elsewhere in this issue.



The westernmost suspended span, the first to be erected (on falsework) in its final position, viewed from the north-west

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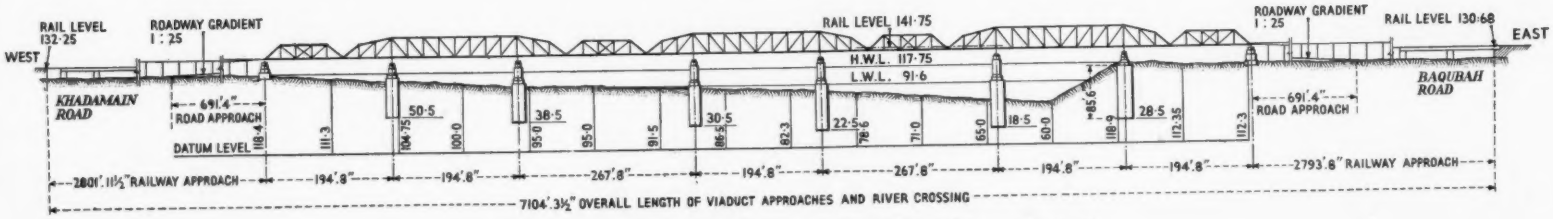
L.M.R. Evening Classes.—The number of staff which has enrolled for this year's special winter evening classes organised by the London Midland Region, amounts to over 8,000, and nearly 3,000 of this total are attending courses on goods and passenger station working. To meet the needs of staff who cannot attend the classes, correspondence courses have been introduced for over 1,000 students. Other popular courses are those on the theory and practice of permanent-way maintenance, block regulation and signalling arrangements, and mutual-improvement classes, which provide for instruction to men in footplate grades. There is also a comprehensive programme of single lectures spread over various centres, and it is expected that at least 10,000 attendances will be recorded. These classes and lectures, together with textbooks, are provided free, and where rail travel is necessary, students are given free facilities between their homes and the educational centre they are attending. In addition to the classes organised by the L.M.R., arrangements are made for staff to attend at reduced rates, and with free railway travel, courses in subjects of examinations of the Institute of Transport given by local authorities and universities.

Petrol Allowances.—In view of the concession made to private car owners, under which the standard allowance of fuel will be issued as from May 1, 1949, in addition to supplementary allowances, it has been decided that, as from the same date, owners of vehicles which are licensed for private, as well as for goods purposes, and draw "X" coupons from the Regional Transport Commissioners, will be granted the standard allowance for 90 miles private motoring a month, in addition to allowances for business purposes. Not more than one suitable vehicle may be used by each operator for private purposes.

Tigris Bridge at Baghdad, Iraqi State Railways

An artist's impression of how the eastern half of the new bridge will appear from the south-west



Elevation of river spans and approach viaducts (shown broken)

"Door-to-Door" Exhibition, French National Railways

An interesting display of containers and other material designed to obviate rail-road transhipment

M. MARCEL FLOURET, President of the French National Railways Administration, opened the "Door-to-Door" Exhibition at the Gare des Batignolles, Paris, on October 11. The exhibition remained open from 2 p.m. to 6 p.m. daily until October 16 inclusive. The exhibits, one of which was illustrated on page 470 of our October 22 issue, were of special interest to manufacturers and business men who use containers for rail, sea, and air transport.

Door-to-door delivery by the S.N.C.F. and associated road hauliers under satisfactory conditions of speed and safety was exemplified in the material shown. Advantages claimed included a reduction of intermediate handling and transhipment of goods, thus saving constantly increasing labour costs.

The S.N.C.F. showed ten different types of containers, including three small mobile containers running on small swivel wheels, of a capacity from one to three cu. m., and seven large containers with capacities of from 3·6 to 18 cu. m. Private firms exhibited small containers made of light alloys, one fitted as a refrigerator, and larger types for transport of cement, sheet steel, and household furniture.

Containers as Trailers

One of the most interesting exhibits was the trailer and tractor used for rail and road transport of the Groupement Technique des Transporteurs Mixtes (G.T.T.M.). The trailer is a roomy van of 24 cu. met. capacity. Great success is claimed for this method of solving the problem of rapid long-distance transport from door to door. It is known as the U.F.R. system, promoted by the Union des Transports Ferroviaires et Routiers in collaboration with the S.N.C.F. Road tractors of normal type are used, but the trailers and the railway flat wagons on which they are loaded are built specially for railway use. The S.N.C.F. places such wagons at the disposal of hauliers, who own the U.F.R. trailers and tractors. Financial arrangements are made to enable road hauliers to acquire the trailers on easy terms.

The trailer is fitted with flanged wheels and the flat wagon has two rails to receive it. When run on to the wagon by the aid of guide rails the trailer is held firmly in position by clamps gripping the flanges and acting as shock absorbers. Two men only are required, one to drive the tractor and the other to fix or unfix the clamps. A three-ton trailer may be loaded in less than two minutes, and the tractor is then ready to bring up another trailer. The flanged wheels of the rear axle of the trailer are concentric with its two road wheels. A string of wagons also may be loaded; the rail gap between any two wagons is filled by hinged lift rails to make the track continuous. Oil tanks, similarly fitted with flanged wheels, also may be transported as trailers. Tractor and trailer have instantaneous automatic coupling.

Forty goods stations in France are equipped for the U.F.R. system. There are 400 trailers in use, and upwards of

(*Continued on page* 669)

Tractor with flange-wheel trailer on rails on flat wagon

Griffet 5-ton crane lifting container

Rubber-tyre road trailer for carrying railway wagons

Apparatus for Station Announcing Systems

Design of amplifiers and loudspeakers for a service that is appreciated by the public and lightens the work of the staff at busy periods

Beam Distribution loudspeakers on the boat train platform at Parkeston Quay, Eastern Region

STATION loudspeakers had proved their value in many installations before the war, and during the war years their usefulness became still further appreciated by travellers in the exceptional conditions of the blackout, shortage of staff, and emergency alterations of train services. At the present time, the habit of listening for announcements at large stations is firmly established among the travelling public, and information conveyed in this way can relieve platform staff of inquiries to an extent that rarely is achieved by printed notices, departure indicators, and timetable posters. At the same time, the practice of broadcasting recorded music over the loudspeakers at certain times of the day, has proved popular at some main-line stations.

A system that has the confidence of travellers to this extent is an important aid to efficiency in handling passenger traffic. Moreover, it is passing from the stage of being appreciated when it is available, to that of being looked for among the amenities of a large station.

Although station requirements vary widely, it is possible for standard items of apparatus to be used in various combinations to permit flexibility in planning installations. Numerous stations on all Regions of British Railways have been equipped by the General Electric Co. Ltd., and the range of apparatus used is described in this article.

The required number of amplifiers and their associated meter, relay, test and power supply panels are installed in a main rack assembly in, or adjacent to, the announcer's cabin. Two similar amplifiers are provided normally, either of which will operate all the loudspeakers at reduced volume, should the other become unserviceable. The microphone is usually a robust moving-coil type on an adjustable table stand, connected by a flexible cable to the announcer's control cabinet. A flexible multicore cable from the cabinet to a wall terminal block, provides the connection with the wiring to the amplifier rack. Where the highest quality of speech is desired and an announcer's room with suitable acoustic properties is available, a ribbon-type microphone can be used in conjunction with a pre-amplifier, mounted in the normal amplifier rack, to provide the necessary input level for the main amplifier.

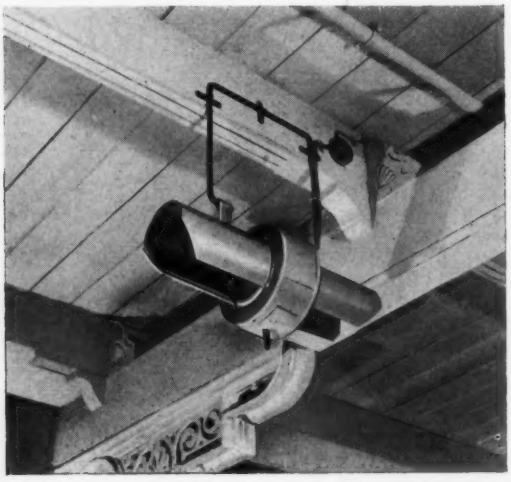
A row of keys on the announcer's control unit enables the various loudspeaker circuits to be selected individually, or collectively. For example, several circuits might serve two platforms each, and separate circuits would be provided for the circulating area, different sections of the approach area, and the refreshment rooms. A coloured signal lamp on the cabinet is illuminated when the announcer presses the "speak" key, which connects the microphone to the amplifiers and switches on the H.T. supply.

For guidance in speaking, an output level meter is fitted on the cabinet, the pointer of which should be maintained within a red sector on the scale. This meter is duplicated on the output meter panel in the apparatus rack, for the information of the maintenance engineer. Both meters read the signal level on the loudspeaker lines, and are adjusted to give indications within the red sector of the scale after the amplifier volume controls have been set during a test broadcast to provide the required volume level on the station. A fairly constant reading is maintained during an announcement, as the meter circuit is arranged with a long delay, the pointer therefore having a rapid rise and slow fall.

As the link between the operating staff and the public, it is essential for the announcer to have contact with various offices in the station, from which notice of special arrangements may be received, or information may be requested and broadcast when train services are delayed or interrupted. Particular emphasis was laid on this requirement of station announcing systems by the Southern Area of the L.N.E.R. before nationalisation, and it is being provided in the installations now being carried out under the direction of the Signal & Telecommunications Engineer, Eastern Region.

An announcer's private telephone circuit can be an integral part of these installations, with its own power supply panel in the main rack frame, and the necessary relays and retards added to the remote control panel in the same rack. Up to six remote telephones may be served by the private circuit, and in addition to the private circuit instrument, the announcer may have a separate telephone connected to the ordinary station exchange.

To call other instruments on the



Method of mounting and wiring Beam Distribution loudspeaker under platform awning

Announcer's control unit and microphone in Continental booking office at Parkeston Quay

private circuit, the announcer rings them in code, by operating a key on the control panel, though any outstation can call the announcer merely by lifting its handset. If an announcement is being broadcast when an incoming call is received, the bell on the announcer's telephone does not ring, but a red call light is illuminated on the control cabinet. A second call light records incoming calls from the station switchboard in similar circumstances. The ordinary telephone bells are silenced and the call lights brought into circuit by the action of operating the "speak" key to make an announcement.

The amplifiers used in these installations are of the G.E.C. standard series, with outputs of 20, 30, or 60 W., and the loudspeakers are grouped in four, eight, or twelve circuits, normally divided between the two amplifiers. An emergency change-over switching panel mounted in the rack frame enables all circuits to be connected to one amplifier in the event of breakdown. This switch is operated by the announcer, the rack being installed in proximity to the announcing position, and while ensuring maintenance of service at reduced volume, it simultaneously connects a test load resistance across the faulty amplifier ready for the maintenance engineer to begin his investigation of the fault.

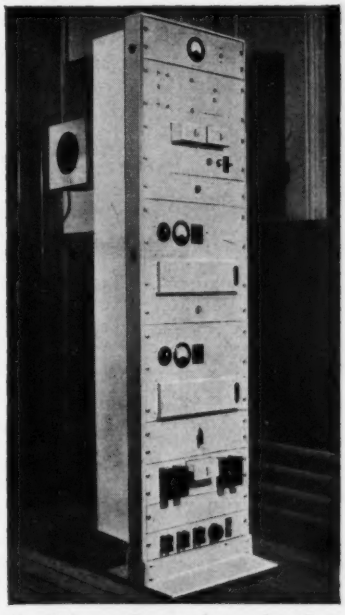
The only other manipulation required from the announcer is to switch-off the faulty amplifier by operating the mains switch through the slot in the control cover, and switch the output level meter to the one in use. A test loudspeaker for the maintenance engineer's use is mounted in a convenient position adjacent to the back of the rack frame, and is connected to suitable terminals on the output level meter panel. It is switched to whichever amplifier it is required to test, by means of the two-way switch on that panel.

Several types of loudspeaker are available to meet the various conditions of open and roofed platforms: large and small circulating areas; station approaches; queueing areas; car parks; and so on. The G.E.C. Beam Distribution loudspeaker is suitable for the majority of platforms, both open and roofed with an awning. Units are spaced usually at approximately 40-ft. intervals, although when a 24-ft. spacing can be obtained, the results are improved. The complete loudspeaker assembly is designed to give a long life without attention, in the arduous conditions of railway stations.

Usually the Beam Distribution loudspeaker is connected to give a power of 1 W. When output up to 3 W. is needed, as in circulating areas of moderate size, the Senior Industrial loudspeaker may be used. Larger circulating areas are served by Multibeam loudspeakers, which consist of a galvanised-steel case containing nine suitable P.M. dust and weatherproof loudspeaker units, arranged on three facets to give widespread distribution of sound. Various powers are obtainable by adjustment of the matching transformer tappings; normally the 3·5 W. or 6·5 W. settings are adequate. Some traffic conditions make it necessary to use the 13-W. output at certain times, and this may be selected by means of a "normal/loud" key added to the announcer's control cabinet. Good quality musical reproduction can be obtained with this loudspeaker, of which fact aural evidence often may be had from the concourse at Waterloo Station.

Several railway outdoor announcement requirements, in addition to those of stations, are met by a projector horn loudspeaker. When used on platforms, this type frequently is mounted at the end of the awning, to cover the open area beyond, when satisfactory service with low power is given at distances up to 150 ft. This loudspeaker, therefore, is particularly suitable for installations where the number of units must be kept low for economic reasons.

For indoor installation, in booking halls, refreshment rooms, and the like, there are multiple-unit and single-unit assemblies in attractive cabinets. A robust volume control for adjustment by the staff employed in the neighbourhood, may be fitted to the cabinets, but is arranged so that the volume can be lowered only to a certain extent, with no "off" position, to ensure that service always is available.



Amplifier and control panel rack at Parkeston Quay. The engineer's test loudspeaker is seen in background

Some of the more recent installations of G.E.C. station announcing systems are those at Waterloo, Marylebone, Cannon Street, Liverpool Street, and Fenchurch Street among the London termini, and outside London such equipment is either already operating, or in the course of installation, at Cleethorpes, Skegness, Parkeston Quay, Colchester, Ely, and Blackpool Central, as well as at various other stations.

The illustrations accompanying this article show the installation at Harwich Parkeston Quay, Eastern Region, where at the height of the summer season as many as 4,000 passengers a day are dealt with in transit between the boat trains and the steamships serving the Hook of Holland, Antwerp and Esbjerg. There are two loudspeaker circuits, one serving the platform with 14 Beam Distribution units spaced 24 ft. apart, and the other supplying one Multibeam loudspeaker and two 3-unit cabinet loudspeakers in the sheds through which the passengers pass between the station platform and the quayside. The neat form of mounting and wiring adopted by the Eastern Region Signals & Telecommunications Department is seen in the close-up view of one of the Beam Distribution units under the platform awning.

The amplifier rack and announcer's control cabinet are installed in the Continental booking office, where interpreters are available for making multi-lingual broadcasts when necessary, in addition to the regular station announcer. It can be seen from the view of the rack that covers, slotted for access to the mains switches, are fitted on the amplifier panels to protect the volume and tone controls once they have been adjusted. A single large cover protects all the chassis and apparatus at the rear of the rack, and, in accordance with modern practice, all relays are mounted with their contacts protruding through the front of the panel, so as to be accessible for cleaning merely by removing a small pull-off cover. It also is possible to localise possible valve faults without opening the back of the rack, by means of the multi-position test switch and cathode current meter associated with each amplifier.

Experience with the Parkeston Quay installation has shown that much time and clerical work can be saved by the ability to contact individual passengers by means of broadcasts. Travellers who have not claimed their registered baggage, for example, can be directed to the Customs shed before leaving by train or boat; otherwise, the luggage would be left behind, and considerable correspondence and other office work would be necessary to restore it to its owner. In addition, the loudspeaker equipment frequently is used in connection with the delivery of telephone or radio messages, addressed to travellers passing through the station.

"Door-to-Door" Exhibition, French National Railways

(*Concluded from page* 667)

300 in course of construction. The Monnet Plan for French reconstruction and equipment estimates that a total of 1,960 trailers will be available in 1950.

Another form of container (trailer) and tractor forming together a four-wheel vehicle to run on the road was exhibited by the Somcort firm. This container stands on its own four feet when the trailer is detached. To allow this, its road wheels are raised and remain suspended under the container, and do not act as bearer wheels. Mechanism attached to the trailer and actuated by a hydraulic jack lifts or lowers the wheels. The same applies to two small bearer wheels at the rear of the tractor. Coupling is automatic. Five such two-ton trailers are loaded side by side crosswise on a single 15-ton flat wagon, from any side platform and thus five containers with ten tons of goods are quickly ready for despatching.

The Huet-Fives-Lille firm showed its trailer, fitted with removable wheels, for small containers. Another interesting exhibit was the rubber-tyred road trailer for carrying railway wagons to factories, warehouses and other premises having no adjacent railway sidings.

Portable cranes for loading and unloading containers on to flat or open railway wagons were also on view, with other apparatus for lifting containers. The 5-ton Griffet crane, capable of travelling under its own power at a speed of 15 m.p.h., has a clearance of 19½ ft. under the hook of the pulley block. The crane was exhibited at work lifting 5-ton containers into open wagons with high sides.

The New "Sky Top" Lounge Car

Among the new cars on the "Hiawatha" expresses running between Chicago, Milwaukee, and the Twin Cities, U.S.A., is the "Sky Top" observation lounge car shown in the photograph reproduced above

Gants Hill Station Concourse, Central Line, London Transport

When Gants Hill Station, on the Newbury Park tube extension of the Central Line, was opened on December 14, 1947, this lofty domed hall between the up and down platforms was not finished; it was opened on April 4 last. The hall is 150 ft. long and 20 ft. high, and is the largest deep-level structure of its kind in Great Britain

RAILWAY NEWS SECTION

PERSONAL

The Docks & Inland Waterways Executive has appointed Mr. M. R. Haddock, O.B.E. (at present Chief Inspector, Ports & Shipping Inspectorate, Control Commission, Germany), to be an Assistant Secretary.

Mr. J. E. S. Bodger, M.I.C.E., M.Inst.T., who retired recently from the position of General Manager, Ceylon Government Railway, commenced his training as a pupil under Mr. J. Lee, then District Engineer, Peterborough, Great Northern Railway, in 1910. On the completion of his articles he was transferred as an Assistant to the District Engineer's Office, Leeds, where he remained until he left for war service early in 1915. After a period in tanks, he was gazetted to the 12th (Pioneer) Battalion, Loyal (North Lancashire) Regiment, with which he was on service and engaged in field engineering works in France, Macedonia, Palestine, again in France, and in Germany until demobilisation in 1919. He was mentioned in despatches for services in Palestine in 1918. On his return to civil life, Mr. Bodger rejoined the Leeds District Engineer's Office, where he remained until he proceeded to Ceylon as an Assistant Engineer in the Railway Extensions Department in 1921. He was employed on the construction of the line to Trincomalee until 1924, when he was transferred to the Way & Works Department as an Assistant District Engineer. He was promoted District Engineer in the same year, and served in various districts until 1933, when he was appointed Assistant Chief Engineer, Way & Works; he also officiated as Signal Engineer for a time. In 1934 he was appointed Deputy Chief Engineer, and, after officiating for various periods in the office, was confirmed as Chief Engineer in 1939. In 1942, in view of the situation caused by the entry of Japan into the war, he was appointed Deputy General Manager with special responsibility in connection with wartime railway activities. In 1945 he became General Manager.

Mr. J. E. S. Bodger

General Manager, Ceylon Government Railway, 1945-48

Mr. H. E. T. Vogel, Chief Technical Adviser to the General Manager, Leopoldina Railway, is retiring on December 31.

The late Mr. W. K. Whigham, who was a Director of the N.E.R. and L.N.E.R., 1920-47, and Deputy-Chairman, L.N.E.R., 1946-47, left £427,277.

Mr. Gerald Leedam, O.B.E., M.Inst.T., Secretary & Manager of the Cheshire Lines Committee, and Cheshire Lines Section, British Railways, since 1936, who is retiring next February, on reaching the age of 60, entered the service of the Great Central Railway in 1907 as a probationer clerk. He was subsequently transferred to the General Manager's Office, and he passed the higher grade examination instituted by Sir Sam Fay in 1909. After four years' experience in various departments, Mr. Leedam returned to the General Manager's Office at Marylebone, and in 1914 was appointed Assistant Goods Agent at Hull. On the outbreak of war in that year he joined the Honourable Artillery Company. He afterwards transferred to the Railway Transport Establishment, Royal Engineers, and he was made a Deputy-Director with the rank of Major in 1917. In 1919 he returned from the Rhine Army to the G.C.R., and was appointed Assistant Traffic Manager, Grimsby. In 1923 he became Assistant to the District Goods Manager, Hull, L.N.E.R., and a year later was appointed Assistant District Goods & Dock Manager, West Hartlepool, which position he held until he was made District Goods Manager, Liverpool, in 1927. In 1932 Mr. Leedam was appointed Acting Manager of the Cheshire Lines Committee, and he became Secretary & Manager in 1936. He was made an O.B.E. in the King's Birthday Honours in 1946, and was appointed an Officer (Brother) of the Order of St. John of Jerusalem in May, 1944. The Cheshire Lines Committee (until it became part of British Railways in January, 1948) was the only joint line in Great Britain with separate management. Locomotive power was always supplied by the owning companies (L.N.E.R. and L.M.S.R.), but the C.L.C. possessed its own passenger rolling stock. At the time it was absorbed in British Railways, the C.L.C. had a mileage of 143, including the 14-mile Southport & Cheshire Lines Extension Railway, worked by the Committee.

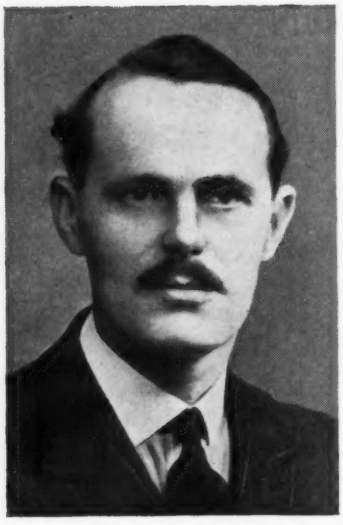
Mr. Gerald Leedam

Secretary & Manager, Cheshire Lines Committee, and Cheshire Lines, British Railways, 1936-49

Mr. H. B. Taylor, District Operating Manager, London (Midland), London Midland Region, British Railways, who has been appointed Assistant Operating Superintendent, Southern Region, entered the service of the L.N.W.R. in 1912. In February, 1917, he joined the Armed Forces, and served in France with the Royal Engineers (No. 6 Light Railway Operating Company), and was awarded the Meritorious Service Medal. He rejoined the L.N.W.R. in January, 1920, and, after holding various appointments, became Head Office Inspector at Crewe in the department of the Divisional Superintendent of Operation in 1930. In 1932 he was detached for special duties in the Chief Operating Manager's Department connected with the closer-working and pooling arrangements between the G.W.R., L.M.S.R. and L.N.E.R. In 1935 he was appointed Senior Clerk (Freight Services Section), Chief Operating Manager's Department, Euston, and, in 1936, Assistant (Freight Services Section). In 1939 his duties were extended to deal with freight rolling-stock organisation. Between September, 1939, and February, 1943, Mr. Taylor served on a number of sub-committees appointed by the Operating Committee, Railway Executive Committee. At the latter time he was appointed Divisional Controller (Freight Services), Office of Divisional Superintendent of Operation, Manchester. He became Assistant (Station Working) to District Goods Manager, Broad Street, in May, 1944, and in October, 1944, was seconded to the R.E.C. as Operating Assistant to the Chairman of the Operating Committee. Mr. Taylor returned to the L.M.S.R. in February, 1946, and was appointed District Operating Manager, London (Midland).

Mr. H. B. Taylor

Appointed Assistant Operating Superintendent, Southern Region, British Railways



Mr. D. D. Bartlett

Appointed Assistant Superintendent (Transportation), East African Railways & Harbours

Mr. Dudley D. Bartlett, A.M.Inst.T., Assistant Divisional Superintendent, Bristol, Western Region, has resigned from the service of British Railways on being appointed Assistant Superintendent (Transportation), East African Railways & Harbours. Mr. Bartlett joined the Great Western Railway in 1931, obtaining station experience in the Plymouth and London Divisions until 1935, when he was transferred to the New Works Section, Office of the Superintendent of the Line. Two years later he was selected as a special trainee, and commenced a course of training, which terminated just before the outbreak of war, when he took up duty in the Military Control Section, Office of the Superintendent of the Line. In August, 1940, he was seconded to the Railway Executive Committee for duty in the Railway Control Section, and in June, 1941, was made Junior Assistant to the District Traffic Manager, Plymouth. He was appointed Chief Clerk to the Divisional Superintendent, Gloucester, in September, 1941, and to a similar position at Bristol in the next year. A year later he returned to Gloucester as Assistant Divisional Superintendent, and he went to Bristol in a similar capacity in June, 1945. He was appointed Senior Assistant at Bristol in June, 1946. Mr. Bartlett is an Associate of the Institution of Railway Signal Engineers, and a Brunel Transport Medallist of the London School of Economics. He was Secretary of the Gloucester Group, Institute of Transport, until 1945, and has served on the committee of the Western Section representing railway interests since that date. He has also been a member of the G.W.R. Rules & Regulations Headquarters Committee for a number of years.

Mr. H. S. Smyth has been appointed Assistant for Multiple-Unit Rolling Stock (Maintenance), Electrical Engineer's Office, Southern Region, British Railways.

Mr. P. G. Stone Clark has been appointed to the executive staff of the British Electric Traction Co. Ltd., and takes up his new duties on January 1. He relinquishes his present appointment with the Tilling Group at the end of the year. In his new appointment, Mr. Stone Clark will be renewing an association with the B.E.T. organisation which began in 1924, when he joined the Trent Motor Traction Co. Ltd., as Chief Engineer. He left the Trent company in 1930 to take up an appointment with Thomas Tilling Limited. From 1943 until 1945 his services were lent to Short Bros. Ltd., of which he was appointed Managing Director.

The president of the Argentine Central Railway Purchasing Commission in London, Señor Juan José Vistalli, has tendered his resignation to President Perón, who has appointed in his place Señor Juan Gatto, a member of the commission.

Lord Hacking, Chairman of the Travel Association, Tourist Division of the British Tourist & Holidays Board, is sailing on December 23 for an extensive tour of South Africa, arriving at Cape Town on January 6.

We regret to record the death on November 26, at the age of 84, of Sir Francis Dundas Couchman, K.B.E., M.I.C.E., who was Agent & General Manager, Burma Railways, from 1913-15, and a Member of the Indian Railway Board, 1915-20. He was a Director of the Madras & Southern Mahratta Railway Co. Ltd. from 1927-41.

Mr. Thomas R. Goodes has been appointed European Secretary & Treasurer, Canadian National Railways. He was born on November 11, 1886, and joined the Canadian Northern Railway in 1906. He was appointed European Registrar & Assistant European Secretary & Treasurer, Canadian National Railways, in October, 1944. He saw service in France and Flanders with the Machine Gun Corps during the 1914-18 war.

SCOTTISH REGION APPOINTMENTS

The following appointments are announced in the Scottish Region:—

Mechanical & Electrical Engineer's Department

Mr. George Thomson to be Outdoor Machinery & Electrical Assistant.

Mr. W. Thomson to be Locomotive Assistant.

Mr. J. Bull, Works Manager, Cowlairs, to be Works Manager, Locomotive Shops, St. Rollox.

Mr. J. S. Scott, Works Superintendent, Barassie Works, to be Works Manager, Locomotive Shops, Cowlairs.

Mr. J. S. Campbell, to be Indoor Assistant.

The following appointments in the Mechanical & Electrical Engineer's Department pertain both to the M. & E. E. and C. & W. Departments:—

Mr. J. O. Roberts to be Staff Assistant; Mr. G. Miller to be Chief Draughtsman; Mr. T. Roy to be Works Machinery & Plant Assistant; Mr. A. Watson to be Metallurgist.

Carriage & Wagon Engineer's Department

Mr. F. J. Pepper, Works Manager, Kilmarnock, to be Outdoor Superintendent (Carriage & Wagon).

Mr. G. Guthrie to be Assistant Outdoor Superintendent (Carriage & Wagon).

Mr. C. Leigh to be Indoor Assistant (Carriage & Wagon).

Mr. E. R. Parsons, Carriage & Wagon Assistant, St. Rollox, to be Works Manager, Carriage & Wagon Shops, Cowlairs.

Mr. H. Wilcock, Works Manager, Germiston, to be Works Manager, Carriage & Wagon Shops, St. Rollox.

Mr. R. Scott to be Works Manager, Barassie Works.

Mr. J. D. Tattersall

Appointed Assistant Regional Solicitor, North Eastern Region, British Railways

Mr. J. D. Tattersall, who, as recorded in our November 26 issue, has been appointed Assistant Regional Solicitor, North Eastern Region, British Railways, joined the London & North Eastern Railway as an Assistant Solicitor in 1938, and devoted himself to the Conveyancing Section of the Chief Legal Adviser's Office. Shortly after the outbreak of war he joined the Army. He was captured at Salonika, and was a prisoner-of-war in Germany for four years. He resumed his work in the Conveyancing Section in September, 1945, and was appointed Assistant Solicitor (Conveyancing) in March, 1948. Mr. Tattersall is the son of Mr. A. E. Tattersall, who retired last year from the position of Assistant Chief Engineer (Signals) L.N.E.R.

Mr. J. S. Nicholl has been appointed Chief Officer (Organisation & Development), Headquarters, Road Transport Executive.

Captain G. S. Sinclair, D.S.O., D.S.C., has been appointed Assistant to the Marine Superintendent, Scottish Region, British Railways. Captain Sinclair served throughout the recent war in the Royal Naval Reserve. Before 1939, and on demobilisation in 1946, he served with P. Henderson & Company, of Glasgow.

EASTERN REGION APPOINTMENTS

The following appointments are announced in the Eastern Region, British Railways:—

Mr. W. O. Reynolds to be Assistant District Superintendent, Nottingham, in succession to Mr. J. Christopher, appointed Assistant District Superintendent, Knebworth.

Mr. D. Fenton to be Assistant District Superintendent, Lincoln, in succession to Mr. W. O. Reynolds.

Mr. J. Bonham-Carter to be Assistant District Superintendent, Manchester, in succession to Mr. S. Lovegrove, appointed Assistant District Superintendent, Stratford.

Mr. E. S. Gellatly to be Assistant District Superintendent, Leeds, in succession to Mr. W. G. Thorpe, appointed Trains Assistant to Operating Superintendent, Western Section.

The Channel Tunnel Co. Ltd.

(*Concluded from page* 663)

This, together with the fact that experience in other directions should enable considerable economies to be effected, will reduce the probable cost, and, according to Mr. Ellson, Engineer for the Channel Tunnel Company, the cost should be between £50 and £60 million. If we take the higher figure, and add to it £6,000,000 to cover payment of interest on capital during construction, we arrive at a total cost of £66 million.

These estimates do not cover the cost of the exchange station or marshalling yards at either end or of the necessary land. The pilot tunnel will cost about £10,000,000 and will take from five to six years to build. The annual cost, therefore, for the first five or six years, after allowing for interest on capital during that period, should not exceed £2,000,000, to be divided equally between Britain and France.

The Financial Aspect

Owing to the recent war, and also to the severe restrictions placed on Continental traffic since the war, traffic statistics for the past ten years that could be of any use to us are non-existent. Therefore, rather than go into the realms of conjecture, I have decided to adhere to the estimates submitted by the 1929 Channel Tunnel Committee.

In arriving at its estimate of 2,357,000 passengers as likely to pass through the tunnel in 1938—the earliest date at which the tunnel could have been ready if the recommendations had been adopted—the committee took the total number of passengers passing between England and the Continent by all routes in 1928. It then formed an estimate of the proportion of such passengers who would be diverted from the existing routes to the new Channel Tunnel route. These estimates varied from 100 per cent. in the case of the Dover-Calais and Folkestone-Boulogne routes to 26 per cent. in the case of the Dover-Ostend route and 21 per cent. in the case of the Harwich-Antwerp and Harwich-Zeebrugge routes. To the total thus arrived at the Committee assumed a progressive increase of 4 per cent. per annum compound for the ten years 1928 to 1938 and so arrived at the figure quoted.

Assuming an average fare of 16s. per passenger for the cross-Channel portion of the journey we get a gross annual revenue from the 2,357,000 passengers of £2,264,000. On the same basis the Committee arrived at a total of 530,000 tons of goods traffic as likely to be served by the Channel Tunnel. In this case, however, no allowance was made for any increase from 1928 and 1938.

The estimated annual revenue to the Channel Tunnel from this source, based on the 1928 rates, is placed at £1,045,000, and the estimated annual revenue from the carriage of parcels and mail, baggage and motorcars is shown at £490,000. We therefore arrive at a total gross revenue attributable to the Channel Tunnel at 1928 fares and rates of £3,520,000. But, since 1928, all cross-Channel fares and rates have advanced by over 75 per cent., and so we may expect a gross revenue to the Channel Tunnel of £5,985,000.

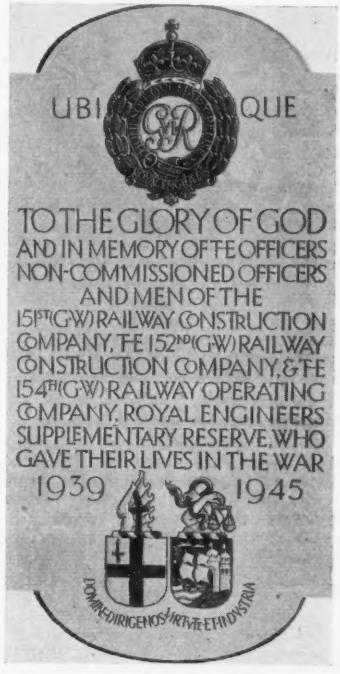
The tunnel cannot be ready for operation before 1960, and it is highly probable that the traffic in that year will be considerably heavier than it was in 1938, but for the present purpose I will assume that the whole of such increase will travel by air.

As to the cost of working and maintenance, assuming an average of 50 trains daily, at an operating cost of 15s. per train-mile, we get a total cost of train working at £600,000 per annum, to which must be added the cost of ventilating, lighting, signalling, drainage, and maintenance of the permanent way. Taking this at an outside figure of £400,000 per annum the total annual expenditure should not exceed £1,000,000. We therefore arrive at an annual net revenue of £4,985,000 to meet the interest on £66,000,000 of new capital at 3 per cent. per annum, namely, £2,000,000, leaving £2,895,000 per annum to cover the loss of £500,000 on the steamers, the guarantee to the Dover Harbour Board, and any other incidental expenditure that might arise. There would appear to be left sufficient margin to justify a considerable reduction in the present cross-Channel rates and charges as soon as the tunnel is brought into use.

Unveiling and Dedication of G.W.R. War Memorial Tablet at Longmoor

On Sunday, December 5, in the Garrison Church of St. Martin, at the Transportation Centre, Longmoor, Hampshire, a tablet to the memory of the Supplementary Reservists who belonged to the units recruited from the staff of the former Great Western Railway, who gave their lives in the war of 1939-45, was unveiled and dedicated.

The tablet, which is illustrated on this page, measures 4 ft. by 2 ft., and was



Memorial tablet to G.W.R. staff recently unveiled at Longmoor

designed by the late Mr. Martin Travers, A.R.C.A. (Arch. London). It is of Portland stone, beautifully executed, with a replica of the cap badge of the Corps of Royal Engineers carved over the text, with one of the Corps mottoes, "Ubique," incorporated in the design. At the base of the tablet are carved the coats of arms and crests of the former Great Western Railway Company, and the whole of the carving is picked out in appropriate colours.

The tablet has been affixed to the wall inside the church between the memorial windows for the G.W.R. staff who fell in the war of 1914-19 and the Canadian Railways memorial window for 1939-45, and, although it is to the memory of those who gave their lives in the 1939-45 war, it will be a visible record that at one time three Great Western units existed, which fact may become lost sight of in the years to come. The three units were the 151st and the 152nd (G.W.) Rly. Construction Companies and the 154th (G.W.) Rly. Operating Company R.E. (S.R.) which except for the numerals do not appear in the reconstituted Transportation Units, R.E.

The service, which was arranged by permission of Brigadier R. Gardiner, C.B.E., the Director of Transportation and Commandant of the Transportation Centre, R.E., Longmoor, was conducted by the Reverend G. T. N. Solomon, C.F., the Padre at Longmoor, during which the memorial tablet, which was covered by a flag of one of the former units, was unveiled by Master Richard Illingworth, young son of the late Lieut.-Colonel V. R. Illingworth, O.B.E., who gave his life in Italy. The memorial was then dedicated by the Assistant Chaplain General, Southern Command, the Reverend Ainsleigh Jones, B.A., K.H.C.

Some 200 persons attended the service, including many former members of the unit, next of kin, and a large number of serving soldiers from the Garrison, and friends. Among those present were:

Colonel K. W. C. Grand, Chief Regional Officer, Western Region, and Mrs. Grand; Colonel A. S. Quartermaine, C.B.E., M.C., Chief Engineer, Western Region (R.E.S.R. 1925); Mr. H. Adams Clarke, Chief Officer (Staff & Establishment) Railway Executive, and Mrs. Clarke; Mr. M. G. R. Smith, M.B.E., Assistant Civil Engineer, Western Region (late 152 Coy.); Major E. T. Davies, M.C., Divisional Engineer, London (R.E.S.R. 1925-8); and Mr. M. A. Henry, Divisional Engineer, Neath, Western Region, and Miss Henry.

Brigadier R. Gardiner, C.B.E., Director of Transportation, and Commandant, Training Centre, R.E., and Mrs. Gardiner; Brigadier W. G. Tyrrell, D.S.O.; Brigadier L. Manton, D.S.O., O.B.E., Principal, Railway Staff College, Derby, and Mrs. Manton; Brigadier C. A. Langley, C.B.E., M.C., Ministry of Transport, and Mrs. Langley; Colonel J. R. Roberts, O.B.E., M.C. (late R.E.), and Mrs. Roberts; Colonel J. F. M. Leese; Colonel G. Pottle, O.B.E. (late R.E.), and Mrs. Pottle; Lieut.-Colonel E. Woodhouse, R.E. (ret.) Ministry of Transport, and Mrs. Woodhouse; Lieut.-Colonel C. H. Barnett and Mrs. Barnett; Lieut.-Colonel G. H. B. Moss, and Mrs. Moss; Major W. T. Calvert, R.E. (formerly Adjutant S.R. Tn. Units R.E.), and Mrs. Calvert; Major G. P. Davies, O.B.E., R.E.; Major W. A. Livings, M.C., R.E.; Major H. G. W. Peace, R.E.

Lieut.-Colonel E. C. Cookson, Divisional Engineer, Newport (O.C. 151 Coy. 1935-36 and 152 Coy. 1936-40); Lieut.-Colonel R. H. Edwards, Docks Engineer, Barry (O.C. 151 Coy. 1936-40); Lieut.-Colonel A. N. Butland, O.B.E., Divisional Engineer, Taunton (152

Coy.); Major S. E. Tyrwhitt, Divisional Locomotive Superintendent, Cardiff (O.C. 154 Coy. 1925-35); Major C. W. Edwards, M.B.E., O.C. 151 Rly. Maint. Squadron R.E. (S.R.) (152 Coy.); Major R. F. J. Smeardon, Barry Docks (152 Coy.); Colonel L. Stewart Sanson (late 150 Coy.); Lieut.-Colonel F. G. Prior, O.B.E.; Lieut.-Colonel A. R. Jackson; Lieut.-Colonel F. Casey; Major R. Hammond, M.B.E.; Major R. G. Thurtle, M.B.E.; Major A. B. Hadley; Major S. G. Oldfield; Major R. Hare-Duke; Major L. G. Bing; Major Ireland; Captain A. C. Preece; Captain G. Baulch (late 156 Coy.); Captain W. S. Smith; Captain G. R. Matthews; Mr. L. G. Illingworth, and Mrs. May Illingworth.

The cost of the memorial was defrayed by subscriptions received from numerous persons connected with the former G.W.R., from friends, and from the surviving members of the units. The memorial was initiated by Lieut.-Colonel R. H. Edwards, who, with Lieut.-Colonel E. C. Cookson, was responsible for the whole of the arrangements in connection with the provision of the tablet, in which work they received valuable help from Brigadier C. A. Langley, who has always taken a great interest in the church at Longmoor.

Institute of Traffic Administration

An informal meeting to discuss the problem of co-operation between management and labour was held by the Institute of Traffic Administration at the Caxton Hall, Westminster, S.W.1, on December 1. Mr. J. A. Dunnage, Vice-President of the Institute, said that in their opinion the discipline of "the whip" and the fear of dismissal was out-dated. Employees should be educated to work for a higher goal than personal self-advancement; they should be taught the rudiments of economics and be led to understand their own position in the industrial life of the nation.

Mr. A. Schaffer, London Area Welfare Officer, Western Region, British Railways, believed that the prime essential in good industrial relations was an agreed system of wage negotiation designed to give quick results. He also agreed that the individual worker should be educated into a fuller understanding of his position in industry as a whole. Publications, lectures, meetings, and the men's local representatives could help in the task of instruction.

He also said that there should be a greater trust between both sides of industry and that more confidence should be placed in the employees' elected representatives. The importance of the supervisor's job was also stressed by Mr. Schaffer, who said that now they were usually selected for their efficiency and seniority. They should, he believed, also gain the confidence of the people working under them, and have a sense of fair dealing as well as sympathy with the staff. He praised the work of the Western Region Staff Fund which had distributed £5,154 to 532 needy cases in one year.

Other speakers, some of whom came from the operative grades of the industry, expressed dissatisfaction with the present constitution of nationalised transport, which was "entirely like the old." It was said that there was too much centralisation and not enough flexibility of administration; the administrative departments were too far removed from the operative grades. The workers now looked for a genuine demonstration of joint consultation on the part of the Railway Executive, which should apply itself to reality and not to words.

Questions in Parliament

Plymouth—Tavistock Branch Line

Mrs. Lucy Middleton (Plymouth, Sutton—Lab.) on November 29 asked the Minister of Transport what answer he had made to the request contained in the petition, signed by local residents and presented to him in 1947, asking that a halt should be established at Riverford on the Plymouth—Tavistock branch line.

Mr. Alfred Barnes (Minister of Transport): I have been unable to trace the receipt of this petition. In 1947, when the railways were under Government control, it would have been for me to deal with such a request, but it is now a matter for the British Transport Commission.

Mrs. Middleton: If the Minister traces this petition, will he then send it on to the appropriate authority with his blessing?

Mr. Barnes: We should certainly be delighted to discover this petition.

Road, Rail, and Air Accidents

Mr. B. Janner (Leicester West—Lab.) on November 23 asked the Minister of Transport if he could give the number of road accidents, air accidents and main-line rail accidents, respectively, during 1947, together with the number of killed and injured.

Mr. Alfred Barnes stated in a written answer: The reports on road accidents submitted to my department by the police relate to deaths and injuries, and I regret that information as to the number of road accidents is not available. In 1947, 4,881 persons were killed and 161,318 injured in road accidents. There were 1,381 train accidents on the main-line railways, involving 121 deaths and 1,328 injuries; in addition, 268 persons were killed and 6,907 injured in accidents connected with the movement of trains on these railways. I am informed by the Minister of Civil Aviation that there were 81 aircraft accidents, including accidents which occurred outside the United Kingdom to aircraft registered in the United Kingdom, in which 93 persons were killed and 98 injured.

State Subsidies for Coastal Shipping

Mr. H. Hynd (Hackney Central—Lab.) on November 29 asked the Minister of Transport whether he intended to refer to the new Coastal Shipping Advisory Committee the question of whether State subsidies for coastal shipping should be continued.

Mr. Alfred Barnes stated in a written answer: I propose, at this stage, to leave the committee to consider and report on the matters which, in its opinion, are the most urgent. I have no doubt that these will include matters affecting the need for the subsidy to which Mr. Hynd refers.

Transport of Coal

Captain John Crowder (Finchley—C.) on November 25 asked the Minister of Fuel & Power what percentage of coal had been transported from the colliery to the consumer by rail and by sea, respectively, in 1939, and in 1945, and what was the percentage transported by these respective means at the present time.

Mr. Hugh Gaitskell (Minister of Fuel & Power): Information is not available for 1939, but, in 1945, 11 per cent. of total disposals of coal to inland consumers was carried by sea and 61 per cent. by rail. In 1947, the proportions were 13 per cent. and 61 per cent., respectively.

Captain Crowder: Can the Minister say why the Government seems to discourage the coastal trade so much, and can he do something to see that more coal is transported by sea, as it is obviously cheaper and much more satisfactory in every way?

Mr. Gaitskell: I could not agree that the Government has in any way discouraged the transport of coal by sea, but, if Captain Crowder is interested in transport by sea, perhaps he will put down a question on that subject to the Minister of Transport.

Export of Machine Tools

Colonel O. E. Crosthwaite-Eyre (New Forest & Christchurch—C.) on November 22 asked the President of the Board of Trade if he would amend the Export of Goods (Control) (Amendment No. 3) Order, 1948, so as to preclude the export of all machine tools that could be used for armament purposes.

Mr. Harold Wilson (President of the Board of Trade): Machine tools designed for use for armament purposes are already included in the Order. I do not propose to amend the Order to include machine tools generally.

Colonel Crosthwaite-Eyre: When the President of the Board of Trade says that machine tools for armament purposes generally are included within the Order, can he say in what part of that Order any tools except those required for small arms manufacture appear?

Mr. Wilson: I am sure that Colonel Crosthwaite-Eyre will realise the difficulty here. In fact, practically every machine tool can be used in one way or another for armament manufacture. I am satisfied that to put them all under control would involve a very serious interference with our export drive. If Colonel Crosthwaite-Eyre has any particular kind of machine tool in mind, which he thinks should be brought under control, I hope he will let us know about it.

Railways in African Colonies

Mr. S. Wingfield Digby (Western Dorset—C.) on December 1 asked the Secretary of State for the Colonies whether he would make a statement about the proposed new railway links between Broken Hill and Mombasa and Mikindani, respectively; and what assistance was being given by His Majesty's Government in raising the necessary loans.

Mr. A. Creech Jones (Secretary of State for the Colonies), in a written answer, stated: His Majesty's Government and the Colonial Governments concerned attach considerable importance to the construction of a north-south railway link, and they are of the view that this project should be prosecuted as rapidly as possible. To this end, it has been decided that comprehensive engineering and economic surveys, which are an essential preliminary to construction, should be made of the possible alternative routes Broken Hill—Mbeya—Dodoma—Arusha—Nairobi; and Broken Hill—Mbeya—Morogoro (or Kilosa)—Korogwe. In addition, but as a subsidiary operation, it is proposed to make a quick reconnaissance survey of a route linking Broken Hill with the groundnut railway to Mikindani with a view to ascertaining whether such a route is likely to be a practical engineering proposition. As regards the second part of the question, it is hoped to secure the assistance of the Economic Co-operation Administration in these surveys as regards both the financial arrangements and the provision of the necessary staff, and that it will not be necessary to have recourse to a loan. The question of finance for the construction does not arise at present.

Banbury Hostel for Railwaymen

A new hostel at Banbury, for railwaymen unable to secure accommodation, was officially opened, on November 26, by Mr. W. P. Allen, Member of the Railway Executive. Mr. K. W. C. Grand, Chief Regional Officer, Western Region, British Railways, was in the chair.

Others present for the occasion included officers of the Railway Executive headquarters and the Western Region, area organisers of the A.S.L.E. & F., and the N.U.R., and representatives of Sectional Councils and Local Departmental Committees.

Within easy reach of Banbury Station, the new hostel has accommodation for 71 men, with separate living quarters for the manager, the matron, who is a qualified nurse, and domestic staff. A separate cubicle, with bed, bedroom chair, built-in wardrobe, built-in dressing chest, and central heating has been provided for each resident at the hostel.

There is also a recreation room, workroom, dining room capable of seating 40 people, and a sick bay with four beds. Prices of meals will average from 6d. to 1s. 2½d., and lodging will cost 1s. a night. Living at the hostel will thus cost about 4s. 5d. a day.

British Steel Founders' Anniversary Dinner

At the May Fair Hotel, London, on December 1, more than 150 guests, representing the iron and steel industry and allied engineering industries and institutions, were present at a dinner given by the British Steel Founders' Association, when the principal speakers were Sir Frederick Bain, President of the Federation of British Industries, and the Master Cutler, Lt.-Colonel J. P. Hunt.

After the Loyal toast, the Chairman gave the toast of British industry, and in the course of his speech defined the true purpose of a trade association as the giving of continuous service to the consumer, through good and bad times, and looking after the interests of those whose livelihood was invested in the industry. Their industry made no apology for wanting to make profits, because without profits there was no security for anybody.

Sir Frederick Bain, replying, said that on this occasion they were unable to put out of their minds the great danger which menaced them. The iron and steel industry had shown what it could do to help the country in a time of crisis, and to nationalise steel now would result in disorder all round. The masterly speech by Sir Andrew Duncan in the House of Commons during the recent debate on the Iron & Steel Bill could not be answered by Government spokesmen, for the simple reason that Sir Andrew Duncan knew what he was talking about.

They had in the Anglo-American Council on Productivity a first-rate British team of representatives of employers and trade unions who were working for the prosperity of the country as a whole. He would like, also, to pay a tribute to the members of the team from the U.S.A. Contact at first hand had enabled them to put themselves in our place, and they had found that as a general rule the *tempo* of work in this country was as high as in America.

The Master Cutler, proposing the toast of the Art and Science of Steel Founding, said that the only way to prosperity was for management and employees to get together, which was what had been done in the steel industry.

Mr. Frank Rowe, Vice-Chairman of the Association, replying, said he knew of no other industry where the knowledge of one was more frequently open to all.

Mr. T. H. Summerson, Chairman of the Development Committee of the British Steel Founders' Association, proposed the toast of the Guests, to which Sir John M. Duncanson, Commercial & Technical Director of the British Iron and Steel Federation, replied.

Mr. K. W. C. Grand, Chief Regional Officer, Western Region, speaking at the opening of the Banbury Hostel. On his left is Mr. W. P. Allen, Member of the Railway Executive, and on his right, Mr. R. Burgoyne, Regional Staff Officer; Mr. S. G. Hearn, Assistant Operating Superintendent; Mr. J. A. Warren-King, District Goods Manager, Birmingham; and Mr. F. W. Hawksworth, Chief Mechanical Engineer, Western Region (See article on Banbury Hostel above)

NEW MANCHESTER OFFICE FOR THOS. COOK & SON.—Thos. Cook & Son Ltd. opened a third office in Manchester on December 1. It is situated in Kendal Milne's Stores, Deansgate. The other offices are in Market Street and Oxford Street.

Dining room of the Banbury Hostel on the occasion of the inaugural luncheon on November 26

British Transport Commission Statistics

Summary of the principal statistics for the four-week period ended October 3

Number 10 of the series of *Transport Statistics*, published by the British Transport Commission,* brings the figures nearly up to date, though we look forward to the receipt of the next number, because it will contain operating details which may throw light on the table of receipts for the four weeks ended October 31, printed on page 567 of our November 19 issue. That was the first occasion, as our article explained, that a true comparison of receipts was possible this year, because of an increase in railway charges on October 1, 1947. We therefore do not propose to discuss No. 1 of the usual set of tables annexed, beyond drawing attention to the poor increases of 4.7 per cent. in British Railways' passenger receipts and 2·6 per cent. in their merchandise receipts.

Table 2 (A) shows that the decrease in passenger journeys originating in the month of September was 25,482,000 or 20 per cent. Every region had a decrease varying from 27 per cent. in the Scottish to 17 per cent. in the North Eastern Region. The loss of 1,092,000 passengers in the North Eastern is especially disappointing, as that Region increased its steam coaching miles by 11·5 per cent. Table 2 (D) shows that no other region ran additional mileage so freely. Perhaps we should explain that in our tables figures in brackets give the percentage increase, or decrease on the corresponding period of 1947.

* British Transport Commission Statistics, 1948. Series No. 10. Period to October 3. London: British Transport Commission. Price 1s.

STAFF

—	Commission's Head office	British Railways	London Transport	Hotels & Catering	Steamships Marine & Docks	Inland Waterways	Railway Clearing House	Total
Administrative ...	136	80,139	4,871	1,882	2,183	707	617	90,535
Operating ...	—	351,215	61,131	—	15,612	1,909	—	429,867
Maintenance & construction ...	—	212,894	31,098	—	7,133	2,766	—	253,891
Others	13	13,483	3,970	15,015	160	—	350	32,991
Total ...	149	657,731	101,070	16,897	25,088	5,382	967	807,284

1. BRITISH TRANSPORT COMMISSION TRAFFIC RECEIPTS

—	Four weeks to October 3		Inc. or dec.	Aggregate to October 3		Inc. or dec.
	1948	1947		1948	1947	
	£000	£000		£000	£000	
British Railways—						
Passengers	9,746	9,308	+ 438	98,882	91,712	+ 7,170
Parcels, etc., by passenger train... ...	2,269	2,069	+ 200	22,427	19,749	+ 2,478
Merchandise	6,271	6,107	+ 164	63,668	54,371	+ 9,297
Minerals	2,294	1,727	+ 567	21,853	15,647	+ 6,206
Coal & coke	5,392	4,332	+ 1,060	50,571	40,867	+ 9,704
Livestock	180	133	+ 47	804	716	+ 88
	26,152	23,676	+ 2,476	258,205	223,062	+ 35,143
Steamships	953	904	+ 49	7,827	7,121	+ 706
Inland Waterways	135	138	− 3	1,280	1,149	+ 131
Hotels & Catering	1,088	1,056	+ 32	10,279	9,581	+ 698
London Transport—						
Railways	1,096	1,026	+ 70	11,156	10,094	+ 1,062
Buses & coaches	2,520	2,329	+ 191	24,413	21,992	+ 2,421
Trams & trolleybuses	881	849	+ 32	8,656	7,987	+ 669
	4,497	4,204	+ 293	44,225	40,073	+ 4,152
Total	32,825	29,978	+ 2,847	321,816	280,986	+ 40,830

The North Eastern Region made a better showing in dealing with freight traffic. In Table 2 (B), it leads the field with an increase in originating traffic of 438,000 tons or nearly 13 per cent. The Eastern Region had the largest increase in coal and coke—36,000 tons or 21 per cent., but its merchandise forwardings were down by 81,000 tons, or 12 per cent. In Scotland, merchandise tonnage fell off at much the same rate and none of the other Regions had an increase. This continuous loss of high class goods is a serious matter. For the 40 weeks to October 3, the aggregate decrease was 387,000 tons, practically 1 per cent.

Net ton miles were up in all Regions, except the Western and Southern, lifting the average train load to 157 tons. The length of haul for merchandise increased by 5 miles to 120 miles, but minerals and coal were carried for shorter distances than in 1947. Freight train speed at 8·4 m.p.h. was a little better than it was a year ago, but left plenty of room for improvement. Coal consumption remained high at nearly

(*Continued on page 678*)

2. BRITISH RAILWAYS

(A) Passenger Journeys Originating in the Month of September

—	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Ordinary fares	1,545,000 (−15·56)	760,000 (−9·60)	2,153,000 (−11·12)	905,000 (−7·72)	190,000 (−20·58)	380,000 (−25·56)	5,933,000 (−13·05)
Monthly return	6,477,000 (−24·21)	1,909,000 (−41·62)	7,489,000 (−21·15)	2,106,000 (−28·96)	520,000 (−50·66)	1,088,000 (−32·64)	19,589,000 (−27·30)
Excursion, weekend, cheap day, etc.	3,010,000 (+239·41)	1,784,000 (+224·04)	3,076,000 (+155·23)	1,043,000 (+265·94)	734,000 (+186·65)	782,000 (+356·69)	10,429,000 (+236·53)
Workmen	7,232,000 (−5·80)	1,799,000 (−7·77)	6,226,000 (−0·49)	1,880,000 (−9·91)	901,000 (−17·15)	913,000 (−17·01)	18,951,000 (−5·99)
Other descriptions ...	1,311,000 (−19·91)	897,000 (−23·43)	1,407,000 (−23·81)	656,000 (−24·38)	302,000 (−29·40)	392,000 (−23·44)	4,965,000 (−23·17)
Season tickets	10,822,000 (−33·71)	5,499,000 (−28·09)	16,169,000 (−35·29)	3,534,000 (−43·49)	2,521,000 (−21·09)	2,835,000 (−41·31)	41,380,000 (−34·56)
Total	30,397,000 (−17·62)	12,648,000 (−18·03)	36,520,000 (−20·54)	10,124,000 (−24·66)	5,168,000 (−17·44)	6,390,000 (−26·89)	101,247,000 (−20·11)

(B) Freight Tonnage Originating

—	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Merchandise...	1,310,000 (−4·72)	806,000 (−2·75)	317,000 (−3·00)	601,000 (−11·82)	581,000 (−0·80)	573,000 (−12·09)	4,188,000 (−5·88)
Minerals	1,635,000 (+3·69)	647,000 (+17·26)	110,000 (−5·93)	731,000 (+11·73)	836,000 (+24·36)	623,000 (+24·89)	4,582,000 (+12·55)
Coal & coke	4,472,000 (+8·34)	1,910,000 (+2·29)	260,000 (−3·50)	2,063,000 (+21·12)	2,449,000 (+12·79)	1,609,000 (+9·78)	12,763,000 (+9·98)
Livestock	32,000 (+11·31)	14,000 (−26·16)	5,000 (−8·63)	4,000 (−41·67)	11,000 (+10·58)	50,000 (−12·19)	116,000 (−9·02)
Total	7,449,000 (+4·80)	3,377,000 (+3·37)	692,000 (−3·71)	3,399,000 (+11·57)	3,877,000 (+12·73)	2,855,000 (+6·79)	21,649,000 (+6·89)

(C) Net Ton Miles

—	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Merchandise & livestock ...	198,803,000 (+5·55)	102,209,000 (−9·54)	28,496,000 (+0·83)	85,964,000 (−0·68)	45,517,000 (−15·34)	85,230,000 (−1·29)	546,219,000 (−1·81)
Minerals	130,203,000 (+1·72)	75,591,000 (+23·28)	16,219,000 (−1·37)	93,991,000 (+10·29)	33,219,000 (+23·74)	42,612,000 (+12·57)	391,835,000 (+10·16)
Coal & coke	300,011,000 (+9·20)	126,393,000 (−7·02)	27,802,000 (−6·26)	180,213,000 (+17·05)	69,798,000 (+5·48)	66,512,000 (+4·63)	770,729,000 (+6·45)
Total, all classes of traffic ...	629,017,000 (+6·42)	304,193,000 (−1·95)	72,517,000 (−2·48)	360,168,000 (+10·57)	148,534,000 (−1·19)	194,354,000 (+3·51)	1,708,783,000 (+4·45)

(D) Train Miles

—	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Coaching train miles—							
Steam—							
Loaded	4,333,000 (+9·98)	2,903,000 (+5·54)	1,552,000 (+9·49)	2,590,000 (+8·46)	1,027,000 (+11·47)	1,777,000 (+3·07)	14,182,000 (+7·92)
Empty	141,000 (+9·25)	138,000 (+2·06)	63,000 (+16·09)	94,000 (+8·32)	41,000 (+13·95)	65,000 (+1·73)	542,000 (+7·31)
Total loaded & empty ...	4,474,000 (+9·96)	3,041,000 (+5·38)	1,615,000 (+9·73)	2,684,000 (+8·45)	1,068,000 (+11·57)	1,842,000 (+3·02)	14,724,000 (+7·90)
Electric—							
Loaded	440,000 (+8·32)	—	2,788,000 (+5·88)	21,000 (−61·57)	92,000 (+1·49)	—	3,341,000 (+4·91)
Empty	20,000 (−1·99)	—	67,000 (+5·48)	1,000 (−16·91)	11,000 (+19·24)	—	99,000 (+4·59)
Total loaded & empty ...	460,000 (+7·82)	—	2,855,000 (+5·87)	22,000 (−59·86)	103,000 (+3·02)	—	3,440,000 (+4·90)
Freight train miles—							
Loaded	3,116,000 (+2·94)	1,629,000 (+1·71)	539,000 (−4·98)	1,710,000 (+4·19)	893,000 (−1·45)	1,468,000 (+0·52)	9,355,000 (+1·64)
Empty	550,000 (+12·84)	194,000 (+0·66)	11,000 (−7·61)	334,000 (+11·87)	231,000 (+28·72)	220,000 (+15·27)	1,540,000 (+13·15)
Total loaded & empty ...	3,666,000 (+4·31)	1,823,000 (+1·60)	550,000 (−5·04)	2,044,000 (+5·37)	1,124,000 (+3·54)	1,688,000 (+2·22)	10.895,000 (+3·13)
Total coaching and freight train miles—							
Loaded	7,889,000 (+7·01)	4,532,000 (+4·11)	4,879,000 (+5·67)	4,321,000 (+5·80)	2,012,000 (+4·79)	3,245,000 (+1·91)	26,878,000 (+5·28)
Empty	711,000 (+11·44)	332,000 (+1·22)	141,000 (+8·46)	429,000 (+10·85)	283,000 (+26·90)	285,000 (+11·76)	2,181,000 (+11·21)
Total loaded & empty ...	8,600,000 (+7·37)	4,864,000 (+3·93)	5,020,000 (+5·74)	4,750,000 (+6·25)	2,295,000 (+7·11)	3,530,000 (+2·64)	29,059,000 (+5·71)

(E) Freight Train Miles per Train Hour

Region											Total	
London Midland		Western		Southern		Eastern		North Eastern		Scottish			
1948	1947	1948	1947	1948	1947	1948	1947	1948	1947	1948	1947	1948	1947
7·32	6·93	9·46	8·41	8·79	8·78	8·16	7·65	10·15	9·40	9·57	9·80	8·42	7·98

(F) Locomotive Coal Consumption

—	Region												Total	
	London Midland		Western		Southern		Eastern		North Eastern		Scottish			
	Tons	Per cent.	Tons	Per cent.	Tons	Per cent.	Tons	Per cent.	Tons	Per cent.	Tons	Per cent.	Tons	Per cent.
Tonnage consumed ...	351,000	(+0·25)	169,000	(+8·33)	76,000	(+2·25)	203,000	(+3·13)	89,000	(−0·58)	176,000	(+3·93)	1,064,000	(+2·69)
Lb. per engine mile ...	63·85	(−3·67)	51·69	(+4·68)	53·96	(+1·49)	65·00	(−1·77)	60·81	(−4·43)	72·71	(+2·02)	61·93	(−0·80)

(G) Rolling Stock Position

—	Operating stock	Number under repair	Serviceable stock	Serviceable stock in 1947
Locomotives	19,777	3,783	15,994	15,985
Coaching vehicles	55,315	6,384	48,931	47,487
Freight wagons	1,184,078	141,965	1,040,113	1,019,900

3. INLAND WATERWAYS

Tonnage of traffic and ton-miles

—	Tonnage	Per cent.	Ton-miles	Per cent.
General merchandise ...	366,000	(+33·08)	5,395,000	(−8·49)
Liquids in bulk	129,000	(−8·68)	3,130,000	(+11·65)
Coal, coke, patent fuel, & peat	449,000	(+15·84)	6,704,000	(+11·48)
Total	944,000	(+17·43)	15,229,000	(+3·51)

4. LONDON TRANSPORT

(A) Passenger Journeys Originating

—	Number	Per cent.
Railways	48,245,000	(+4·04)
Buses & coaches	214,999,000	(+7·62)
Trams & trolleybuses ...	94,124,000	(+3·89)
Total	357,368,000	(+6·12)

(B) Rail and Road Car Miles

—	Miles	Per cent.
Railways	17,779,000	(+8·60)
Buses & coaches	24,395,000	(+6·56)
Trams & trolleybuses ...	8,774,000	(+3·05)
Total	50,948,000	(+6·63)

British Transport Commission Statistics

(*Concluded from page 676*)

62 lb. an engine-mile; it was close on 73 lb. an engine-mile in the Scottish Region.

London Transport had a busy time, originating 1 per cent. more journeys than in the September period and 4 per cent. more than in the corresponding weeks of 1947. Tonnage on inland waterways rose by 17 per cent., but evidently passed for short distances as ton-miles were higher by no more than 3·5 per cent.

The Commission's staff was less in numbers by 1,105. The whole of the reduction was in operating grades. The number of administrative staff was higher by 37, British Railways making 16 of the new appointments. The statement does not yet include figures for the staff employed by the Road Transport Executive. It is desirable that the gap in the records should be filled without delay.

Notes and News

Vacancies with John Fowler & Co. (Leeds) Ltd.—John Fowler & Co. (Leeds) Ltd. invite applications from senior men of experience and training in diesel-mechanical and diesel-electric shunting locomotive sales; also from men with shop and drawing office experience in the manufacture of diesel-mechanical and diesel-electric shunting locomotives for training to become sales engineers to fill important posts overseas. See Official Notices on page 679.

British Railways Exhibition Stand at Swansea.—Acting for the Cabinet Economic Committee, the Economic Information Unit recently asked the National Savings Movement to sponsor a number of exhibitions at large centres illustrating the importance of savings and linking them by means of industrial exhibits with the production drive. At the first exhibition held at Swansea from November 12-20, the Railway Executive and the Docks & Inland Waterways Executive jointly participated, their exhibit consisting of a stand, shown in the photograph reproduced below, displaying a working model railway and static models of freight vehicles supplemented by cut-outs illustrating rail and dock facilities, together with a model of Swansea Docks. The stand, which can be quickly dismantled for transport to any point, was made at the Cardiff Engineering Depot of the Western Region, and the working models were loaned and operated by the Swansea Model Railway Club. The exhibition was visited by nearly 80,000 people or an average of 10,000 a day. A similar exhibition is now running at West Bromwich.

Peruvian Corporation Limited.—The report for the year ended June 30, 1948, shows a profit of £62,466, and the debit balance at net revenue account brought forward from last year was £2,582,430. After provision for income tax and other charges the debit balance to be carried forward amounts to £2,915,890. In his statement with the report, Mr. W. H. White, Chairman, points out that gross revenue from railways and steamers increased by 14 per cent., *i.e.*, from £1,872,645 to £2,140,342, due mainly to increased tariff rates. Passengers carried increased from 3,020,760 to 3,099,629. Expenditure rose sharply to £2,092,419 as against £1,786,831 last year. Wages rose by 23 per cent. and the amount paid for pensions and compensation was £28,851 more than in the previous year.

Visit of Docks Executive Members to Clyde Area.—Members of the Docks & Inland Waterways Executive of the British Transport Commission are visiting Clydeside and Ayrshire on December 13 and following days to consult port authorities and representatives of other interests concerned with the operation and use of certain Scottish ports and docks. The Executive will be represented by the following Members: Sir Reginald Hill (Chairman), Mr. John Donovan, Sir Robert Letch, Sir Hector McNeill, and Sir Ernest Murrant. They will be in Glasgow on December 13 and 14, and will visit Greenock on December 15, Ardrossan on December 16, and Ayr on December 17. This will be the first of a series of visits to port areas which the Executive will make in carrying out its duties under section 66 of the Transport Act, which provides that the British Transport Commission shall keep the trade harbours under review, with a view to determining whether the scheme-making powers conferred by Parliament should be exercised with respect to any trade harbour or group of trade harbours. The Commission has delegated to the Executive the duty of keeping trade harbours under review, and has requested the Executive to advise as to whether schemes should be prepared for submission to the Minister of Transport.

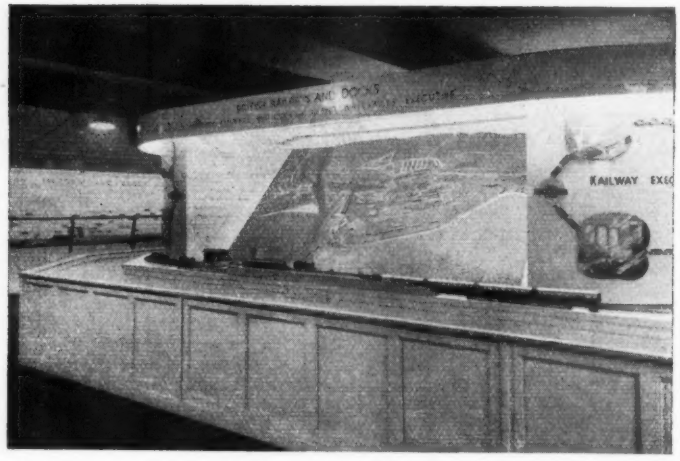
Sunday Excursions from Glasgow.—Each Sunday in December, the Scottish Region is running a special excursion train from Glasgow Buchanan Street Station, at 9.25 a.m. for Perth, Dundee, and Aberdeen which will return from Aberdeen at 6.35, Dundee West at 7.55, and Perth at 8.45 p.m. Half-day excursion fares will apply not only to the points mentioned, but also to the intermediate stations at which the train will call, namely: Larbert, Stirling, Gleneagles, Forfar, and Stonehaven.

Institution of Locomotive Engineers.—Due to unforeseen circumstances, the paper entitled: "Notes from a Works' Manager's Diary," which was to be read by Mr. J. H. P. Lloyd, before the Institution of Locomotive Engineers, on December 15, is not available. At a general meeting of the Institution of Locomotive Engineers, to be held at the Institution of Mechanical Engineers, London, S.W.1, on the same date, Mr. A. W. J. Dymond will read a paper on "Forty Years of Automatic Train Control" (The Great Western System).

East Coast Trains *via* Lincoln.—Because of engineering operations on both the up and down East Coast main lines at Hougham, north of Grantham, on Sundays, December 12 and 19, all trains booked to pass this point on these days, between 3 a.m. and 8 p.m., will be diverted to run *via* Lincoln. As a result of this diversion, various trains from Kings Cross to the north will run 20 to 40 min. later from certain intermediate stations, and southbound trains will run as booked to York, Doncaster, or Retford, and arrive at Kings Cross 10 to 45 min. later. As certain trains which are booked to call at Newark will be unable to do so, a bus service between Grantham and Newark and a shuttle rail service between Newark and Retford will be operated to connect with them.

Eight Diesel-Electric Shunting Locomotives for Ceylon.—The North British Locomotive Co. Ltd., in association with the General Electric Co. Ltd. as suppliers of the electrical equipment, has received an order for eight 625-h.p. diesel-electric shunting locomotives for the Ceylon Government Railway. The locomotives have single cabs, and are carried on two four-wheel bogies, with all axles motored. Maximum tractive effort is 35,000 lb. at up to 4 m.p.h. The power unit consists of a Paxman 12 RPH turbo-charged diesel engine driving main and auxiliary generators. Principal dimensions of the locomotives are as follow:—Length over headstocks, 34 ft.; maximum height, 12 ft. 6 in.; maximum width, 9 ft.; bogie wheelbase, 8 ft.; bogie wheel dia., 3 ft. 6 in.; weight per axle, 13 tons; total weight, 52 tons; total wheelbase, 25 ft.; tractive effort, 35,000 lb.; maximum speed, 20 m.p.h. The locomotives are designed, principally, for operating in the Colombo goods yard, but also

British Railways Exhibit at Swansea



Section of a joint exhibit organised by the Railway Executive and the Docks & Inland Waterways Executive at a Swansea exhibition (See paragraph above)

PARLIAMENTARY AND OFFICIAL NOTICES

The British Transport Commission

In Parliament

Session 1948-49.

NOTICE IS HEREBY GIVEN that the British Transport Commission have made application to Parliament in the present Session for leave to introduce a Bill under the above short title.

A notice containing a concise summary of the purposes of the Bill has been or will be published in *The Times* newspaper of the 1st and 8th December, 1948.

And notice is hereby further given that on or before the 20th day of November, 1948, plans and sections relating to the intended works and plans of all lands which may be taken or used compulsorily with a book of reference to such plans were deposited for public inspection as follows (that is to say):—

As regards works and lands in the County of Middlesex with the Clerk of the County Council of that County at his office at the Guildhall, Westminster S.W.1; as regards works and lands in the City and County Borough of Nottingham with the Town Clerk of that Borough at his office at Nottingham; as regards works and lands in the County Borough of Birkenhead with the Town Clerk of that Borough at his office at Birkenhead; as regards lands in the County of London with the Clerk of the London County Council at his office at the County Hall, Westminster Bridge, S.E.1; as regards lands in the County of Essex with the Clerk of the County Council of that County at his office at Chelmsford; as regards lands in the County of Stafford with the Clerk of the County Council of that County at his office at Stafford; and as regards lands in the County of Wilts. with the Clerk of the County Council of that County at his office at Trowbridge.

And that copies of so much of the said plans, sections and book of reference as relates to each of the several areas hereinafter mentioned in or through which the said intended works are proposed to be made or lands are situate were on or before the said 20th day of November deposited for public inspection as follows (that is to say):—

As relates to any metropolitan or non-county borough with the Town Clerk of such borough at his office; as relates to any urban district or rural district with the Clerk of the district council of such district at his office and as relates to any parish with the Clerk of the parish council of such parish at his office, or if he have no office at his residence.

A copy of the Bill may be inspected and copies thereof obtained at the price of three shillings for each copy at the undermentioned offices, at the office of the Solicitor (Scottish Region), Railway Executive, at 23, Waterloo Place, Edinburgh, and at the Stationmaster's office at the following railway stations: Uxbridge (London Transport), Ipswich, Fleetwood, Lewes, Leatherhead, Barlaston, Semley, Birkenhead (Hamilton Square), Nottingham (London Midland), Romford, Rickmansworth (London Transport), Workington and Coventry.

Dated this 7th day of December, 1948.

MILES BEEVOR,
4, Cowley Street,
Westminster, S.W.1.
Chief Legal Adviser.
SHERWOOD & CO.,
St. Stephen's House,
Victoria Embankment,
Westminster, S.W.1.
Parliamentary Agents.

JOHN FOWLER & CO. (LEEDS) LTD. invite applications from senior men of experience and training in Diesel Mechanical and Diesel Electric Shunting Locomotive Sales. Excellent prospects for advancement. Applications will be treated as strictly confidential. Write in first instance to: SALES MANAGER (LOCOMOTIVE DEPARTMENT), Leathley Road, Leeds 10.

JOHN FOWLER & CO. (LEEDS) LTD. are desirous of securing the services of men with Shop and D.O. experience in manufacture of Diesel Mechanical and Diesel Electric Shunting Locomotives for training to become Sales Engineers to fill important posts overseas. Write in first instance to: SALES MANAGER (LOCOMOTIVE DEPARTMENT), Leathley Road, Leeds, 10.

TRANSPORT ADMINISTRATION IN TROPICAL DEPENDENCIES. By George V. O. Bulkeley, C.B.E., M.I.Mech.E. With chapters on Finance, Accounting and Statistical Method. In collaboration with Ernest J. Smith, F.C.I.S., formerly Chief Accountant, Nigerian Government Railway. 190 pages Medium 8vo. Full cloth. *Price* 20*s*. *By post* 20*s*. 6*d*.

LARGE Midland Firm of Coachbuilders require Draughtsmen experienced in the design and construction of public service vehicles, both composite and all-metal. Please reply details of age, experience, and salary required to Box 491, T. & G., 101, St. Martin's Lane, London, W.C.2.

SENIOR DRAUGHTSMAN required with experience in Railway Locomotive Motion Design. Apply by letter to BRITISH TIMKEN LIMITED, Cheston Road, Aston, Birmingham, 7.

ENGINEERING CASTINGS

MACHINE Tool Foundry has spare capacity for floor moulded castings up to 3 tons each, cored or otherwise, and 200 lb. each machine moulded.—Box 231, *The Railway Gazette*, 33, Tothill Street, Westminster, S.W.1.

RAILWAY MAINTENANCE PROBLEMS By H. A. Hull (late District Engineer, L.M.S.R.). Valuable information. With much sound advice upon the upkeep of permanent way. Cloth, 8¼ in. by 5¼ in. 82 pp. Diagrams. 5*s*. *By post* 5*s*. 3*d*.

4-8-2 CLASS "15F" LOCOMOTIVE FOR THE SOUTH AFRICAN RAILWAYS The latest examples of these main-line passenger and freight locomotives have been built by the North British Locomotive Co. Ltd. Reprinted from *The Railway Gazette* of September 20, 1946. *Price* 2*s*. *By post* 2*s*. 2*d*.

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

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may be required to work on the Kolonnawa branch line. They are to be capable of working continuously for six days without refuelling.

Stephenson Locomotive Society.—The first annual dinner of the Stephenson Locomotive Society's London & Southern Area, which was held at the Old Bell restaurant, Holborn, on December 4, was well supported by members and their ladies. Mr. W. G. Boyden, Chairman of the London & Southern Area Committee, was in the Chair, and the occasion was informal.

Additional Restaurant Car Facilities.—From December 6, restaurant car facilities have been introduced on the Western Region 10.45 a.m. train from Paddington to Cheltenham and the 3.50 p.m. Cheltenham to Paddington. In addition, the existing restaurant car facilities on the following ten trains have been increased:—

10.15 a.m. Cardiff to Paddington
5.55 p.m. Paddington to Cardiff
11.34 a.m. Wolverhampton to Paddington
6.10 p.m. Paddington to Wolverhampton
12.00 noon Bristol to Paddington
6.30 p.m. Paddington to Bristol
9.10 a.m. Paddington to Shrewsbury
4.38 p.m. Shrewsbury to Paddington
11.55 a.m. Paddington to Swansea
11.48 a.m. Swansea to Paddington

L.M.R. Orchestral Society Concert.—On Friday, December 3, the London Midland Region (London) Orchestral Society presented a vocal and instrumental concert in the former Shareholders' Meeting Room, Euston. The programme was conducted by Walter E. Chalk, assisted by John Grindley. The soloists were Irene Hurran (Contralto), Ronald Stear (Bass), and Percival Garratt (Solo Pianoforte & Accompanist). All the works were appreciatively received by the audience, and particularly the Ballet Suite, Polovetz Dances from "Prince Igor," by Borodin. Unfortunately the Finale from Symphony No. 5 in E Minor, op. 95 ("From the New World"), by Dvorak, had to be cancelled as the programme took longer than was planned.

Agreed Charges.—Applications for the approval of 81 further agreed charges under the provisions of section 37 of the Road & Rail Traffic Act, 1933, have been lodged with the Transport Tribunal. Notices of objection must be filed on or before December 14 next.

Institution of Railway Signal Engineers.—On December 22, a paper on "Servicing of Railway Signalling Equipment" will be read by Mr. E. E. Pierce, before the Institution of Railway Signal Engineers. The meeting is being held at the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2, commencing at 6 p.m.; tea will be available at 5.30 p.m.

Messages of Thanks to Transport Workers.—The Minister of Transport has issued a message offering his warmest thanks to transport workers of all grades for their splendid efforts in keeping traffic moving during the recent fog. In the course of his message the Minister said: "The dangers of fog at sea are well known and appreciated, but I doubt whether the public fully realises the tremendous strain which these conditions impose on train and bus crews, signalmen, shunters, lorry drivers, and, indeed, all concerned with road and rail transport." The Minister has also sent a message of appreciation and thanks to the British Transport Commission. The Railway executive has sent, through the Chief Regional Officers, a message to all employees of British Railways thanking them for the excellent work effected in traffic operations under most trying conditions; and a message has been received by the Railway Executive from the National Coal Board placing on record appreciation of the service given to the collieries during the period.

British Railways, Southern Region, Lecture & Debating Society.—The following visits have been arranged for members of British Railways, Southern Region, Lecture & Debating Society: December 14, Long Distance Telephone Exchange, Faraday Building, London, E.C.4; January 8, Blood Transfusion Service, blood supply depot, Sutton; January 15, Tilbury Docks, R.M.S. *Orion;* January 27, repeat visit to Faraday Building; February 12, Tilmanstone colliery.

Tools for the Job.—On November 24, at the British Council cinema in Hanover Street, London, W.1, the firm of Arthur Balfour & Co. Ltd., Sheffield, gave a private showing of its film "Tools for the Job." Aided by a commentary, the film outlines the processes involved in the production of high-grade tool steel and goes on to show some of the many applications of its steels and tools in industry. Included are excellent shots taken in the Acton works of London Transport. The film, which has been made by Cinechrome Limited, Bournemouth, is of 16 mm. size, and is, therefore, particularly suitable for showing to technical societies and groups of engineering students, as it may be projected in an office or small hall. The commentary is being translated into several languages.

Christmas Lectures to Boys.—This Christmas, the subject for the Institution of Civil Engineers' Christmas lectures for boys is "Big Ships and Their Docks." The lectures will be illustrated with films and lantern slides and commence on Thursday, December 30, at 3 p.m., with

"Building Big Ships," by Mr. J. Melville, Chief Shipbuilding Draughtsman, Vickers-Armstrongs Limited. Mr. J. H. Jellett, Docks Engineer, British Railways, Southern Region, will deal with "Docks: Construction and Use" on Monday, January 3, at 3 p.m. and the subject on Tuesday, January 4, at 3 p.m., will be "Big Ships at Sea," by Commodore G. N. Jones, R.N.R. (Retired), Master, Cunard White Star Limited, one-time Staff Captain, *Queen Elizabeth* and *Queen Mary*. Tickets, which are free, can be obtained from the Secretary of the Institution of Civil Engineers, Great George Street, London, S.W.1.

L.P.T.B. (Execution of Work) (Revocation) Order.—The Minister of Transport has made the following Order: S.I. 1948 No. 2469: London Passenger Transport Board (Execution of Work) (Revocation) Order, 1948.

Forthcoming Meetings

December 11 (*Sat.*).—Permanent Way Institution, Manchester & Liverpool Section, in the Manchester Corporation Gas Department's Show Rooms, Mount Street, Manchester, at 2.30 p.m. "Distortion of Track," by Mr. K. C. Marrian, Chairman of the Section.

December 14 (*Tue.*).—Permanent Way Institution, Sheffield Section, at the Royal Victoria Hotel, Sheffield, at 7 p.m. "Out of Gauge Loads," by Mr. H. S. Wood.

December 14 (*Tue.*).—Institute of Traffic Administration, Manchester Centre, at the Grand Hotel, Manchester, at 7 p.m. "Goods in Transit Insurance."

December 14 (*Tue.*).—Railway Students' Association, London School of Economics & Political Science, Houghton Street, London, W.C.2, at 6 p.m. "Railway Education," by Mr. H. F. Sanderson, Principal of British Railways Commercial School at Darlington.

December 14 (*Tue.*).—Institution of Electrical Engineers, Savoy Place, London, W.C.2, at 5.30 p.m. Discussion on "V.H.F. Mobile Radio-Telephone Services," opened by Mr. D. H. Hughes.

December 14 (*Tue.*).—York Locomotive Society; federation debate at Darlington, at 6.30 p.m.

December 14 (*Tue.*).—British Railways, Southern Region, Lecture & Debating Society. Visit to Long Distance Telephone Exchange, Faraday Building, E.C.4.

December 15 (*Wed.*).—Institution of Locomotive Engineers at the Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, at 5.30 p.m. "Forty Years of Automatic Train Control" (The Great Western System), by Mr. A. W. J. Dymond, Member.

December 16 (*Thur.*).—British Railways, Western Region, London Lecture & Debating Society, in the Clerks' Dining Club, Bishop's Bridge Road, Paddington, at 5.45 p.m. "Modern Permanent Way Maintenance," by Mr. A. N. Butland, Divisional Engineer, Taunton, Western Region.

December 16 (*Thur.*).—Diesel Engine Users Association, at Caxton Hall, London, S.W.1, at 2.30 p.m. "Report on Heavy-Oil Engine Working Costs, 1946-7."

December 17 (*Fri.*).—Institute of Transport, Metropolitan Section. Annual Dinner and Visit of President, at the Abercorn Rooms, at 6.45 for 7.15 p.m.

Railway Stock Market

The latest Berlin news has dominated stock markets. There was little selling and prices took their cue from British Funds. The latter lost part of their substantial gains of recent weeks. Next week, however, pay-out money amounting to approximately £20,000,000 will be distributed to old holders of Argentine railway stocks, and it would not be surprising if the bulk of this is temporarily placed into British Funds. Industrial shares are attracting only moderate attention because dividend limitation has robbed them of speculative attractions. Moreover, relaxation of controls will mean increasing competition, and probably reduced profits for many companies. Iron and steel shares have been quieter and in some instances moved further below take-over levels. Now that the Committee stage of the Iron & Steel Bill has been reached more information should become available as to the non-steel assets of individual companies which the Government is prepared to reprieve from nationalisation.

Nationalisation stocks moved closely with the general trend of gilt-edged securities and prices lost ground as buyers are holding off for the time being. Transport 3 per cent. (1978-88) fell back to 99⅜, while the 1967-72 stock was also lower at 100¼, with the 1968-73 stock at 102⅛. There is now less talk in the market of further gilt-edged issues.

A feature of foreign rails has been activity and strength of Leopoldina stocks on latest rumours of take-over developments. In the event of take-over negotiations there probably would be scope for good gains in market prices of the stocks, which seem moderately priced, assuming that the take-over terms were reasonably fair. Leopoldina stocks have not held the best levels touched earlier in the week, but are higher on balance at the time of writing, with the ordinary 12½, the preference stock 40½, the 4 per cent. debentures 81½, and Leopoldina Terminal 5 per cent. debentures 76. In sympathy Great Western of Brazil ordinary shares improved to 106s. 9d. and San Paulo ordinary was 160. Manila Railway "A" debentures were better at 86 with the preference shares 9s. 4½d. B.A. Central 4½ per cent. debentures have changed hands around 46.

In other directions United of Havana 1906 debentures kept steady at 15⅝ with Antofagasta ordinary and preference at 9¼ and 57½ respectively. Mexican Railway 6 per cent. debentures were 82. Uruguay stocks moved moderately lower, where changed, but it is doubtful if quotations have been adequately tested by dealings. French railway sterling bonds have been inclined to improve with Nord at 103½ and Orleans 90. Canadian Pacifics were firm around 21⅞ with the preference stock 79½ and the debentures 111½. Beira Railway bearer shares slumped heavily to 46s. 3d. on the Portuguese take-over terms which were well below the optimistic estimates. Port of Beira shares have also moved down to 17s. 3d.

Small irregular movements characterised road transport shares, Scottish Motor Traction, at 113s. 9d., having lost part of an earlier gain, while B.E.T. deferred stock was £1.920, although Transport Services were favoured up to 34s. 9d. on hopes of an early statement from the company. Tillings have been relatively firm at close on 121s. and Bristol Trams declined further to 84s.

Iron and steel shares again were generally lower awaiting any further clarification of the position. Dorman Long, at 32s. 9d., were inclined to improve on hopes that the constructional steel assets may be reprieved, and John Summers, at close on 34s., were also better. In other directions T. W. Ward (66s. 6d.) lost part of the recent rise. North British Locomotive were close on 25s., and Beyer Peacock 24s. 9d., but Charles Roberts eased to £7½.

Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week: Total this year	Traffics for week: inc. or dec. compared with 1946/47	No. of week	Aggregate traffics to date: Total 1947/8	Aggregate traffics to date: Increase or decrease
South & Central America	Antofagasta...	811	28.11.48	£ 70,890	+ £ 15,248	48	£ 2,637,220	+ £ 518,404
	Bolivar ...	174	July, 1948	$28,960	– $69,357	30	$471,287	– $301,893
	Brazil ...	—	—	—	—	—	—	—
	Cent. Uruguay	970	6.11.48	32,712	+ 2,978	18	595,105	– 7,652
	Costa Rica ...	281	Sept., 1948	34,083	+ 4,533	13	111,619	+ 18,546
	Dorada ...	70	Oct., 1948	32,756	+ 5,956	44	273,241	– 27,659
	G.W. of Brazil	1,040	27.11.48	45,700	+ 1,500	47	1,569,900	– 22,500
	Inter. Ctl. Amer.	794	Oct., 1948	$955,810	– $35,968	44	$11,070,758	+ $167,793
	La Guaira ...	22¾	Nov., 1948	$109,836	+ $20,483	48	$1,158,353	– 86,894
	Leopoldina ...	1,920	27.11.48	54,882	+ 901	47	2,655,080	– 477,453
	Midland Uruguay	319	Sept., 1948	19,608	+ 3,123	12	67,355	+ 16,721
	Nitrate ...	382	30.11.48	14,416	+ 2,474	48	285,710	+ 79,534
	N.W. of Uruguay	113	Sept., 1948	5,686	– 1,213	12	16,335	+ 1,989
	Paraguay Cent.	274	26.11.48	G120,113	+ G49,783	21	G2,141,970	+ G842,782
	Peru Corp.	1,059	Nov., 1948	201,617	+ 56,049	21	954,690	+ 112,982
	Salvador ...	100	Aug, 1948	c80,000	– c2,000	9	c165,000	+ c8,000
	San Paulo ...	153½	—	—	—	—	—	—
	Taltal ...	156	Oct., 1948	7,970	+ 115	17	31,730	+ 7,460
	United of Havana	1,301	20.11.48	42,811	– 19,889	20	880,234	– 366,340
	Uruguay Northern	73	Sept., 1948	1,072	+ 52	12	3,308	+ 111
Canada	Canadian National...	23,473	Aug., 1948	10,110,000	+ 855,250	35	77,676,250	+ 5,854,000
	Canadian Pacific ...	17,037	Oct., 1948	8,613,250	+ 1,159,000	44	72,510,000	+ 6,823,500
Various	Barsi Light† ...	202	Oct., 1948	26,610	+ 12,187	31	181,702	+ 7,717
	Beira	204	Sept., 1948	123,677	– 3,737	52	1,410,947	+ 243,048
	Egyptian Delta ...	607	30.10.48	19,211	+ 1,455	26	328 731	+ 31,899
	Gold Coast ...	536	Oct., 1948	217,730	+ 118,047	31	1,401,622	+ 374,708
	Manila	—	—	—	—	—	—	—
	Mid. of W. Australia	277	Sept., 1948	29,589	+ 5,512	13	82,246	+ 16,684
	Nigeria	1,900	Sept., 1948	412.268	+ 62,429	25	2,617,491	+ 531,086
	Rhodesia	2,445	Sept., 1947	643,980	+ 102,833	52	6,787,603	+ 612,938
	South Africa ...	13,347	13.11.48	1,371,058	+ 81,967	33	43,285,302	+ 2,515,063
	Victoria	4,774	June, 1948	1,358,791	+ 248,144	52	—	—

† Receipts are calculated @ 1s. 6d. to the rupee